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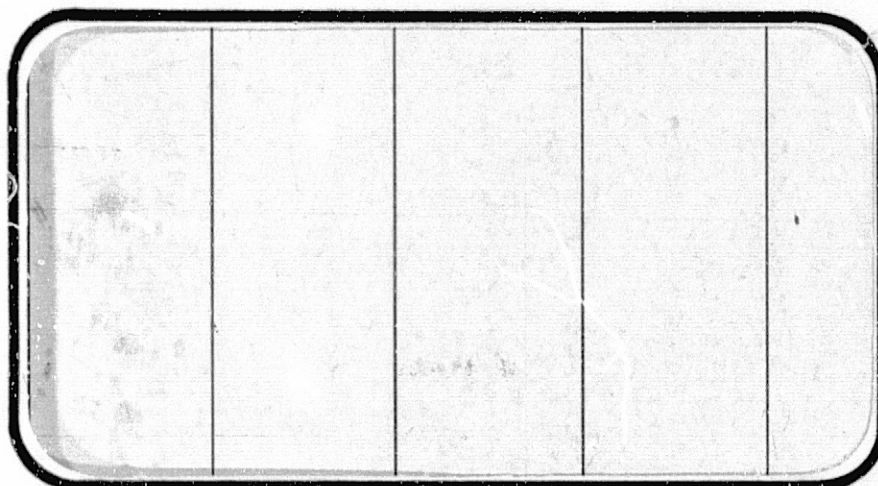
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# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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(NASA-CR-141823) RESULTS OF AN  
INVESTIGATION OF THE 0.003-SCALE SPACE  
SHUTTLE EXTERNAL TANK MSFC MODEL 460 IN THE  
NASA/MSFC 14 X 14-INCH TRISONIC WIND TUNNEL  
TO DETERMINE STATIC PRESSURE DISTRIBUTIONS

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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT



JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANAGEMENT services

SPACE DIVISION



CHRYSLER  
CORPORATION



November, 1975

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VOLUME 1 OF 5

RESULTS OF AN INVESTIGATION OF THE 0.003-SCALE  
SPACE SHUTTLE EXTERNAL TANK MSFC MODEL 460  
IN THE NASA/MSFC 14 X 14-INCH TRISONIC WIND TUNNEL  
TO DETERMINE STATIC PRESSURE DISTRIBUTIONS DURING  
REENTRY (TA2F)

by

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Prepared under NASA Contract Number NAS9-13247

by

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Chrysler Corporation Space Division  
New Orleans, La. 70189

for

Engineering Analysis Division

Johnson Space Center  
National Aeronautics and Space Administration  
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number: MSFC TWT 596  
NASA Series Number: TA2F  
Model Number: 460  
Test Dates: July 20-23, 1974  
Occupancy Hours: 104

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RESULTS OF AN INVESTIGATION OF AN 0.003-SCALE  
SPACE SHUTTLE EXTERNAL TANK MSFC MODEL 460 IN THE  
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DETERMINE STATIC PRESSURE DISTRIBUTIONS DURING REENTRY  
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P. E. Ramsey, MSFC, and G. W. Winkler, NSI

ABSTRACT

Objective of the test was to obtain static pressure distributions for the ET at reentry conditions. Basic configuration of the model was the MCR 0200 ET modified to include a rectangular crossbar at the aft ET/orbiter attach point. Mach numbers were 1.96, 3.48, and 4.96. Reynolds number per foot at these Mach numbers were 6.95 million, 6.42 million, and 4.95 million, respectively. Angle of attack range was -8 to 100 degrees and roll angle was 0 to 315 degrees. Occupancy hours were 104.

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<u>VOLUME 4</u>				
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### SCHEDULE OF COEFFICIENTS PLOTTED:

- A) CP vs. X/LB
- B) CP vs. THETA
- C) DCNM/D(X/LB) vs. X/LB
- D) DCYM/D(X/LB) vs. X/LB
- E) CNM vs. ALPHA
  - CLMM
  - CYM
  - CYNM

# NOMENCLATURE

1

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>	<u>Units</u>
a		speed of sound	m/sec, ft/sec
A <sub>b</sub>		base area; cross-sectional area of the cylindrical ET	in. <sup>2</sup>
b <sub>ref</sub>	BREF	reference span; diameter of the cylindrical section of the model	in.
ET		external tank	
FA		axial force (AF), positive in the negative direction of x <sub>m</sub>	lb
F <sub>N</sub>		normal force (NF), positive in the negative direction of z <sub>m</sub>	lb
F <sub>y</sub>		side force (SF), positive in the positive direction of y <sub>m</sub>	lb
ℓ <sub>B</sub>	LBODY	length of the ET	in.
ℓ <sub>ref</sub>	LREF	reference length; diameter of the cylindrical section of the model	in.
M	MACH	Mach number; V/a	
MRP	MRP	moment reference point located in the x <sub>m</sub> , y <sub>m</sub> , z <sub>m</sub> axes by XMRP, YMRP, and ZMRP (See Data Reduction section)	
M <sub>x</sub>		rolling moment (RM); a moment about the x <sub>m</sub> axis (a positive rolling moment tends to rotate the positive y <sub>m</sub> axis toward the positive z <sub>m</sub> axis)	in.-lb
M <sub>y</sub>		pitching moment (PM); a moment about the y <sub>m</sub> axis (a positive pitching moment tends to rotate the positive z <sub>m</sub> axis toward the positive x <sub>m</sub> axis)	in.-lb
c g		center of gravity	

2

# NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>	<u>Units</u>
$M_z$		yawing moment (YM); a moment about the $z_m$ axis (a positive yawing moment tends to rotate the positive $x_m$ axis toward the positive $y_m$ axis)	in.-lb
$p_\infty$	P	pressure, freestream	psi
$p_o$	P0	stagnation pressure	psi
$q_\infty$	Q(PSI)	free stream dynamic pressure	psi
$S_{ref}$	SREF	reference area; cross-sectional area of the cylindrical section of the model	in. <sup>2</sup>
RN/L	RN/L	unit Reynolds number	per m, per ft
SRB		solid rocket booster	
V		velocity	m/sec, ft/sec
$x_m, y_m, z_m$		missile axis system (see Data Reduction section)	
X		distance from nose of ET model in the negative $x_m$ direction	in.
$x_T, y_T, z_T$		model stations; (see figure 2a)	in.
$x_{CP}/\ell_B$	XCP/L	longitudinal position of the center of pressure, expressed as a fraction of the ET length, measured from the ET nose	
$\frac{x_{CP}}{\ell_B} = \frac{XMRP}{\ell_B} - \frac{C_{m_m}}{C_{N_m}} \frac{\ell_{ref}}{\ell_B}$			
$\bar{c}$		aerodynamic chord	m, ft
COEFFICIENTS			
$C_{A_m}$	CA	axial force coefficient; $F_A/q S_{ref}$	

# NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>	<u>Units</u>
$C_{A_{bm}}$	CAB	base axial force coefficient; $(p_{\infty} - p_b) A_B / q S_{ref}$	
$C_{A_f}$	CAF	forebody axial force coefficient; $C_{A_m} - C_{A_{bm}}$	
$C_{\ell_m}$	CBL	rolling moment coefficient; $M_x / q S_{ref} b_{ref}$	
$C_{m_m}$	CLMM	pitching moment coefficient; $M_y / q S_{ref} \ell_{ref}$	
$C_{N_m}$	CNM	normal force coefficient; $F_N / q S_{ref}$	
$C_{n_m}$	CYNM	yawing moment coefficient; $M_z / q S_{ref} b_{ref}$	
$C_p$	CP	pressure coefficient; $(p - p_{\infty}) / q$	
$C_{Y_m}$	CYM	side force coefficient; $F_y / q S_{ref}$	
$C_{N_m}^{\sim}$	DCN/DX	local normal force coefficient; $\partial C_N / \partial (X/D)$	
$C_{Y_m}^{\sim}$	DCY/DX	local side force coefficient; $\partial C_Y / \partial (X/D)$	
SYMBOLS			
$\alpha$	ALPHA	angle of attack	deg.
$\beta$	BETA	angle of sideslip	deg.
$\phi$	PHI	angle of roll	deg.
$\psi$	PSI	angle of yaw	deg.

# NOMENCLATURE (Concluded)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>	<u>Units</u>
$\theta$	THETA	circumferential location	deg.
$\rho$		mass density	kg/m <sup>3</sup> , slugs/ft <sup>3</sup>
ref		reference conditions	
$\infty$		free stream conditions	
b		base	
c		cavity	
t		total conditions	
B		model body	
T		external tank	
m		missile axis system	
l		local	
s		static conditions	
	MOUNT	1.0 indicates tail mounted ( $T_1$ ) 2.0 indicates side mounted ( $T_2$ )	



## INTRODUCTION

After the solid rocket boosters and the external tank separate from the orbiter, the ET will reenter the earth's atmosphere at high supersonic or even hypersonic Mach numbers. This test is the second of two tests conducted in the NASA-MSFC 14-inch Trisonic Wind Tunnel to obtain force and pressure data on the 324-inch diameter ET at typical reentry angles of attack.

Model (MSFC No. 460) configuration is a 0.003-scale representation of the ET with fuel lines and forward and aft SRB and orbiter attach hardware. Also included is the ET/orbiter rectangular crossbar attach structure.

Pressure taps (192 total) were used to obtain data for evaluating the load distribution on the ET. Further evaluation of the ET aerodynamic characteristics can be made by comparing data from this test with data from TWT 583 (reference 4).

Pressure data were taken at three Mach numbers: 1.96, 3.48, and 4.96. Angle of attack range was -8 to 100 degrees, which was obtained by using two ET model mountings. Range -8 to 30 degrees used a tail-mounted model ( $T_1$ ) for each of eight roll positions, 0 to 315 degrees. This model had attach structure and protuberances. For the range of 51 to 100 degrees, a side-mounted model ( $T_2$ ) at 0° roll position was used.

## MODEL DESCRIPTION

The model is a 0.003-scale of the MCR 0200 space shuttle ET configuration modified to include a crossbar at the aft orbiter/ET attach points. General arrangement of the model is shown in figure 2a. The model is designated MSFC #460, and it consists of two ET models (one tail-mounted and one side-mounted); protuberances simulating fuel lines, attachment hardware, etc.; and model adapters which allowed the tanks to be supported in the tunnel on RI stings #1 and #3. The models were built by NASA to conform to the configuration specified by Rockwell International drawing VL78-000041B (Reference Drawing 6) and Martin-Marietta memo SA-A-74-9 (Reference Report 2).

Both ET models were made of stainless steel and contained 192 pressure orifices each. From these orifices, stainless steel and annealed 0.032-inch OD tubing was routed out the base (or the side) of the model. Four feet of 0.050-inch OD tubing was brazed onto each of the 0.032-inch tubes as close to the exit cavity as possible.

When placed in the tunnel test section, the tubing bundle from the model was secured along the sting and routed down the sector through the tunnel floor. At this point, Tygon tubing was used to connect the steel tubing to quick disconnects, which were connected to the scanivalves. Installation photographs for the tail mounted ( $T_1$ ) and side mounted ( $T_2$ ) models are in figures 3a and 3b, respectively.

Model stations are sometimes used to describe locations of various components of the model. When used, these stations will be given in

### MODEL DESCRIPTION (Concluded)

inches model scale and the zero reference points will be same as in Rockwell International drawing VL72-000088"D" (Reference Drawing 2). Zero reference points are shown in figure 2a.

## CONFIGURATIONS INVESTIGATED

Two ET configurations investigated are defined as follows:

T<sub>1</sub>--MCR 0200 tail-mounted, modified to include crossbar configuration with protuberances.

T<sub>2</sub>--MCR 0200 side-mounted, "clean" configuration (without protuberances).

Each of the configurations consists of the following model components:

T<sub>1</sub>--T<sub>12</sub> AT<sub>5</sub> AT<sub>6</sub> AT<sub>7</sub> AT<sub>8</sub> AT<sub>9</sub> PT<sub>1</sub> PT<sub>2</sub> PT<sub>3</sub> FL<sub>1</sub> FL<sub>2</sub> FR<sub>6</sub>

T<sub>2</sub>--T<sub>12</sub>

Brief descriptions of each component are below. Refer to table

III for dimensional data.

T <sub>12</sub>	Baseline 324-inch diameter external oxygen-hydrogen tank
AT <sub>5</sub>	Forward orbiter/ET attach structure
AT <sub>6</sub>	Left rear orbiter/ET attach structure
AT <sub>7</sub>	Right rear orbiter/ET attach structure
AT <sub>8</sub>	Forward SRB/ET attach structure
AT <sub>9</sub>	Aft SRB/ET attach structure
PT <sub>1</sub>	LOX vent line fairing
PT <sub>2</sub>	LOX feed line
PT <sub>3</sub>	LH <sub>2</sub> feed line
FL <sub>1</sub>	LOX feed line
FL <sub>2</sub>	LH <sub>2</sub> feed line
FR <sub>6</sub>	Aft ET/orbiter crossbar

## TEST FACILITY DESCRIPTION

The Marshall Space Flight Center 14" x 14" Trisonic Wind Tunnel is an intermittent blowdown tunnel which operates by high pressure air flowing from storage to either vacuum or atmospheric conditions. A Mach number range from .2 to 5.85 is covered by utilizing two interchangeable test sections. The transonic section permits testing at Mach 0.20 through 2.50, and the supersonic section permits testing at Mach 2.74 through 5.85. Mach numbers between .2 and .9 are obtained by using a controllable diffuser. The range from .95 to 1.3 is achieved through the use of plenum suction and perforated walls. Mach numbers of 1.44, 1.93 and 2.50 are produced by interchangeable sets of fixed contour nozzle blocks. Above Mach 2.50 a set of fixed contour nozzle blocks is tilted and translated automatically to produce any desired Mach number in .25 increments.

Air is supplied to a 6000 cubic foot storage tank at approximately -40°F dew point and 500 psi. The compressor is a three-stage reciprocating unit driven by a 1500 hp motor.

The tunnel flow is established and controlled with a servo actuated gate valve. The controlled air flows through the valve diffuser into the stilling chamber and heat exchanger where the air temperature can be controlled from ambient to approximately 180°F. The air then passes through the test section which contains the nozzle blocks and test region.

Downstream of the test section is a hydraulically controlled pitch sector that provides a total angle of attack range of 20° ( $\pm 10^\circ$ ). Sting offsets are available for obtaining various maximum angles of attack up to 95°.

## TEST FACILITY DESCRIPTION (Concluded)

The diffuser section has movable floor and ceiling panels which are the primary means of controlling the subsonic Mach numbers and permit more efficient running supersonically. The sector assembly and supersonic diffuser telescope into the subsonic diffuser to allow easy access to the model and test section.

Tunnel flow is exhausted through an acoustically damped tower to atmosphere or into the vacuum field of 42,000 cubic feet. The vacuum tanks are evacuated by vacuum pumps driven by a motor of 500 hp.

Data are recorded by a solid-state digital data acquisition system. The digital data are transferred to punched cards during the run to be reduced later by a computer to proper coefficient form.



## TEST PROCEDURE

First part of the test was conducted using a side-mounted, "clean" configuration ( $T_2$  without protuberances). Since it was a "clean" configuration, the roll angle was considered to always be 0 degrees. Angle of attack range was from 51 to 100 degrees in increments of 3 degrees. Data were obtained at Mach numbers of 1.96, 3.48, and 4.96.

Second part of the test consisted of using a tail-mounted model with attach hardware, fuel lines, and electrical tunnel. Angle of attack range was from -8 to 30 degrees in increments of 4 degrees. Data were obtained at eight roll positions, 0 to 315 degrees in 45-degree increments. All orifices and tubing were checked for leakage at the beginning of the test and after each roll position change. A leak check after rolling the model insured that correct measurements were being received from the orifices. Response time for the scanivalve function was within the one-second intervals allowed each scanivalve.

List of average test conditions is in table I. Dataset run number collation summary is in table II.

## DATA REDUCTION

Location of each pressure orifice and the numbering system are presented in tables IV and V. Also special identification of blocked or inoperative pressure orifices is made for both tail-mounted and side-mounted models in these tables. Locations of these orifices are shown in figure 2b.

Sting deflections were measured outside the tunnel by using check weights. Sting deflection versus load curve for the pressure test (TWT 596) was found to be the same, within allowable accuracy, as that of the force test (TWT 583). The same ET configuration and only slightly different support hardware were used in both force and pressure tests. Increments of  $\alpha$  due to sting bending in the force test were added to the nominal  $\alpha$ 's for the pressure test. This gave reasonably accurate values of angle of attack, accuracy comparable to force test, when the pressure model was tested at the same Mach number and tunnel total pressure as the force model.

Pressure data were reduced to coefficient form and are tabulated along with wind tunnel parameters, configuration, and run number in the appendix. Plots are presented for both longitudinal and circumferential pressure distributions ( $C_p$  vs  $X/\lambda_B$  and  $C_p$  vs  $\theta$ ). These plots are shown for each Mach number, angle of attack, and roll position at which tests were conducted. In addition, the pressure coefficients were integrated to obtain the following missile axis force and moment coefficients:

## DATA REDUCTION (Concluded)

$C_{N_m} = F_N/q S_{ref}$	normal force coefficient
$C_{Y_m} = F_Y/q S_{ref}$	side force coefficient
$C_{m_m} = M_Y/q S_{ref} l_{ref}$	pitching moment coefficient
$C_{n_m} = M_Z/q S_{ref} b_{ref}$	yawing moment coefficient
$C'_{N_m} = \partial C_N / \partial (X/D)$	local normal force coefficient
$C'_{Y_m} = \partial C_Y / \partial (X/D)$	local side force coefficient

Force and moment coefficients obtained from the integration of pressures are for comparison with the results from the force test.

Model reference dimensions used in the data reduction are presented in table VI. The axis system diagram is presented in figure 1. The missile axis system ( $x_m, y_m, z_m$ ) is a non-rolling body axis system that is frequently used in wind tunnel tests and studies of missile flight dynamics. It is a system of axes that rotates with a missile or wind tunnel model through angles of sideslip and angles of attack but never through angles of roll; i.e., it never rotates about the missile or model longitudinal axis. The orientation of the missile axis coefficients is defined in figure 1. The missile axis system is identical with the body axis system at zero roll angle.

Moment reference point (MRP) for the 0.003-scale model is taken to be at the dry weight center of gravity of the ET. For the full-scale ET, the center of gravity is located at  $X_T = 1395.4$  inches. Thus, the MRP for the 0.003-scale ET model is 3.259 inches from the model nose, on the centerline (figure 2a).

## REFERENCES

1. NASA TMX-53185, "The George C. Marshall Space Flight Center's 14 x 14 Inch Trisonic Wind Tunnel Technical Handbook," Simon, Erwin; December 1964.
2. SA-A-74-9, "Space Shuttle External Tank Entry Force and Moment Wind Tunnel Test Requirements," Michna, D. J., Michoud Operations, Martin Marietta Corporation, February 1974.
3. MSI-M-9230-74-270, "A Pre-test Report for MSFC TWT 596, An Investigation to Determine the Static Pressure Distributions During Reentry of a 0.003-scale Modified MCR 200 Space Shuttle External Tank Model in the NASA-MSFC 14 x 14-Inch Trisonic Wind Tunnel," Robertson, M. K. and Winkler, G. W., April 1974.
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## REFERENCE DRAWINGS

1. VL72-000106, 8-6-73; SRB to ET Aft Attach, Approved Link Concept, Shuttle Study; Rockwell International.
2. VL72-000088 "D", 8-3-73; Shuttle Configuration Control, MCR 0200 Baseline Rev. III, Dated 7-2-73; Rockwell International.
3. VL78-000031 "A", 6-29-73; Thermal Protection-External Tank MCR 0200 Baseline Dated 4-11-73; Rockwell International.
4. VL77-000051 "A", 9-10-73; SRB Single PT.-Fwd Thrust Fitting (MCR 0190 Rev. 3 Baseline 8-13-73); Rockwell International.
5. SS-A01176 (Wind Tunnel Model Group); Details - .015 Scale EOHT Attachments (140 A/B) (67-OTS) 11-20-73; Rockwell International.
6. VL78-000041 "B", 5-30-73; External Tank Configuration Control MCR 0200 Revision 1 Dated 5-16-73; Rockwell International.

Table I.

[illegible]

TABLE II.

TEST: MSFC TWY 596		DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: July 1974			
DATA SET IDENTIFIER	CONFIGURATION	SCHD. PARAMETERS/VALUES		NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)										
		$\alpha$	$\beta$		196	348	496								
01A001	T (TAIL MOUNTED)	0	0	0	86	140	139								
002	E.T. WITH	4			87	137	138								
003	PROTUBERANCES	0			88	136	135								
004		4			89	133	134								
005		0	✓		90	132	131								
006		12	20		85	141	142								
007		16			84	144	143								
008		20			83	145	146								
009		24			82	148	147								
010		28	✓		81	149	150								
011		-8	0	90	80	170	169								
012		-4			79	167	168								
013		0			78	166	165								
014		4			77	163	164								
015		8	✓		76	162	161								
016		12	20		75	159	160								
017		16			74	158	157								
01A018		20	✓	✓	73	155	156								
1															
7															
13															
19															
25															
31															
37															
43															
49															
55															
61															
67															
75															
76															

COEFFICIENTS

10VAR (1) 10VAR (2) NDV

& OR  $\beta$

SCHEDULES

COEFFICIENTS

 $\alpha$  OR  $\beta$ 

SCHEDULES

IDVAR (1)

IDVAR (2)

NDV



TABLE II. (Continued)

TEST:MSFC TWT 596		DATE: July 1974										DATA SET/RUN NUMBER COLLATION SUMMARY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
DATA SET IDENTIFIER	CONFIGURATION	SCHED.		PARAMETERS/VALUES			NO. OF RUNS	MACH NUMBERS ( OR ALTERNATE INDEPENDENT VARIABLE )					TEST RUN NUMBERS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		$\alpha$	$\beta$	OFF-SET	MT.	$\phi$		1.96	3.48	4.96																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

MSFC-Form 163-1 (Rev. May 1973)

TABLE II. (Continued)

TEST: MSFC TWT 596		DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: JULY 1974																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
DATA SET IDENTIFIER	CONFIGURATION	SCHD. PARAMETERS/VALUES			NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)					TEST RUN NUMBERS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		$\alpha$	$\beta$	OFF-SET		MT.	$\phi$	1.96	3.46	4.96																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																



TABLE II. (Continued)

TABLE 11. (Continued)

TEST: MSFC TWT 596

DATE: 06/11/74

DATA SET/RUN NUMBER COLLATION SUMMARY

TEST RUN NUMBERS

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES		NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)					TEST RUN NUMBERS									
		$\alpha$	$\beta$	OFF-SET	$\phi$		196	348	496	57	61	55	49	43	37	31	25	19	13	7	
R1A055	T <sub>i</sub> (TAIL-MOUNTED	8	0	TAIL	270	3	100	109	110												
056	ET WITH	12				3	95	120	119												
057	PROTUBERANCES)	16				3	94	117	118												
058		20				3	93	116	115												
✓ 059		24				3	92	113	114												
R1A060	✓	28	✓	✓	✓	3	91	112	111												

TABLE II. (Continued)

TEST: MSFC TWT 596		DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: July 1974									
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES		NO. OF STING COMB RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)					TEST RUN NUMBERS									
		$\alpha$	$\beta$	OFF SET	MT.		$\phi$	SIDE	$\theta$	$\gamma$	1.96	3.48	4.96	6.48	7.96	9.44	10.92	12.40	13.88	15.36	16.84
R1A 061	T <sub>2</sub> (SIDE-MOUNTED)	51	0	0	60	3	0	SIDE	0	C	60	1/1	2								
062	ET WITHOUT	54				3					59	4	3								
063	PROTUBERANCES	57				3					58	5	6								
064		60				3					57	8	7								
065		63				3					56	9	10								
066		66				3					55	12	11								
067		69				3					54	13	14								
068		70				3					53	16/1	15								
069		72				3					52	17	18								
070		75				3					51	20	19								
071		78				3					50	21	22								
072		80				3					49	24	23								
073		82				3					48	25	26								
074		85				3					47	28	27								
075		88				3					46	29	30								
076		90				3					45	32	31								
077		92				3					44	33	34								
R1A 078		95				3					43	36	35								
CP																					
		7	13	19	25	31	37	43	49	55	61	67	73	79	85	91	97	103	109	115	121
		COEFFICIENTS										IDVAR (1) IDVAR (2) NDV									
		$\alpha$ OR $\beta$ SCHEDULES										O.E.: 80° → 100°									
		X C: 50° → 70°																			
		D D: 70° → 90°																			



DATE: JULY 1974

[illegible]

TEST: MSFC TWT 596

MSFC - Form 263-2 (Rev. May 1973)



DATE: July 1974

MSFC - Form 263-1 (Rev. May 1973)

TABLE III. MODEL DIMENSIONAL DATA

MODEL COMPONENT: EXTERNAL TANK - T<sub>12</sub>GENERAL DESCRIPTION: EXTERNAL OXYGEN - HYDROGEN TANK WITH OGIVE NOSE ANDSEMI-ELLIPTICAL TAIL. BEGINNING AT MODEL TANK STATION 0.927 AND ENDING AT STATION  
6.522MODEL SCALE: 0.003REFERENCE DRAWING: VL78-000041B

## THEORETICAL

DIMENSIONS:FULL-SCALEMODEL SCALE

Length

1865 in.5.595 in.

Max. Width

324 in.0.972 in.

Fineness Ratio

5.756 in.5.756 in.

Max. Cross-Sectional

572.555 ft<sup>2</sup>0.742 in.<sup>2</sup>

Base

572.555 ft<sup>2</sup>0.742 in.<sup>2</sup>

WL OF TANK CENTERLINE

400 in.1.200 in.



TABLE III. (Continued)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>5</sub>

GENERAL DESCRIPTION: FORWARD ORBITER/ET ATTACH STRUCTURE

(2 MEMBERS)

MODEL SCALE: 0.003

REFERENCE DRAWING: VL72-000088D

ALL DIMENSIONS IN INCHES MODEL SCALE

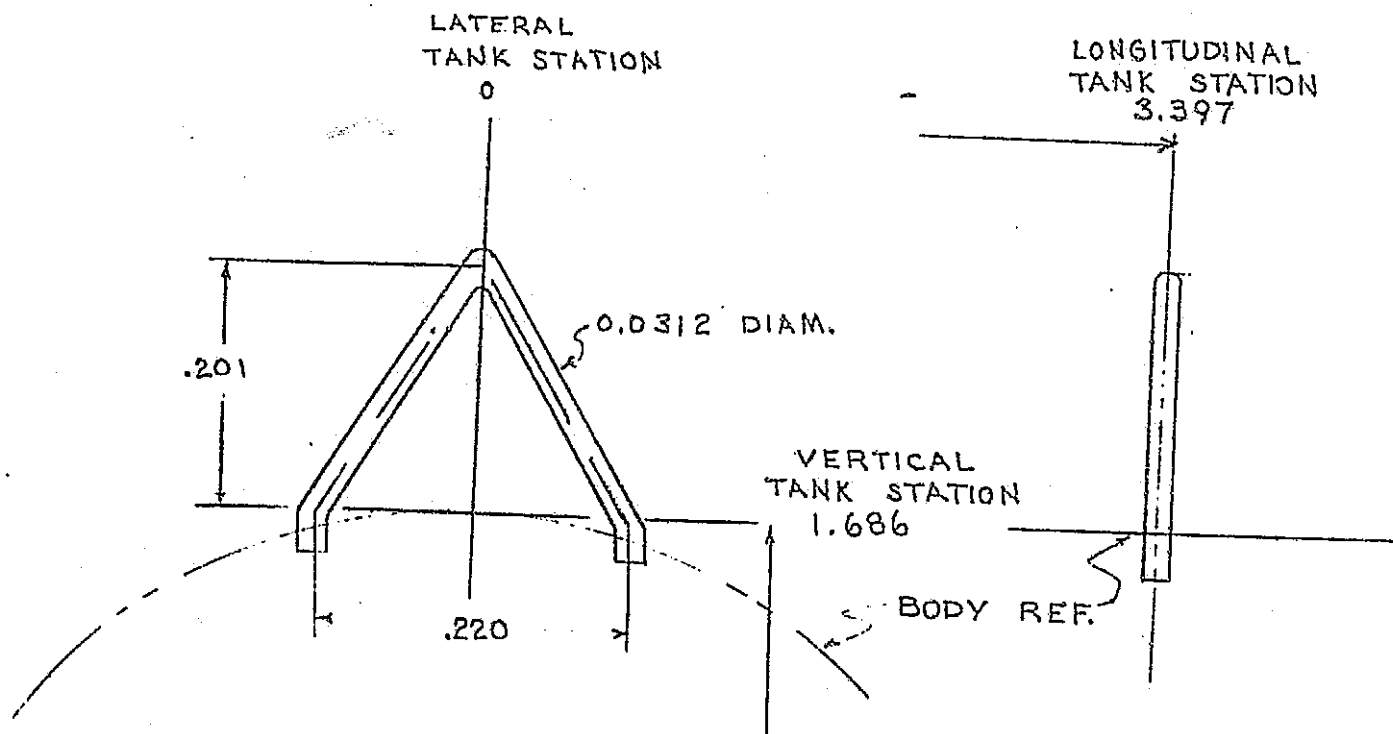


TABLE III. (Continued)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>6</sub>

GENERAL DESCRIPTION: LEFT REAR ORBITER/ET ATTACH STRUCTURE (2 MEMBERS)

MODEL SCALE: 0.003

REFERENCE DRAWING: VL78-000050

ALL DIMENSIONS IN INCHES MODEL SCALE

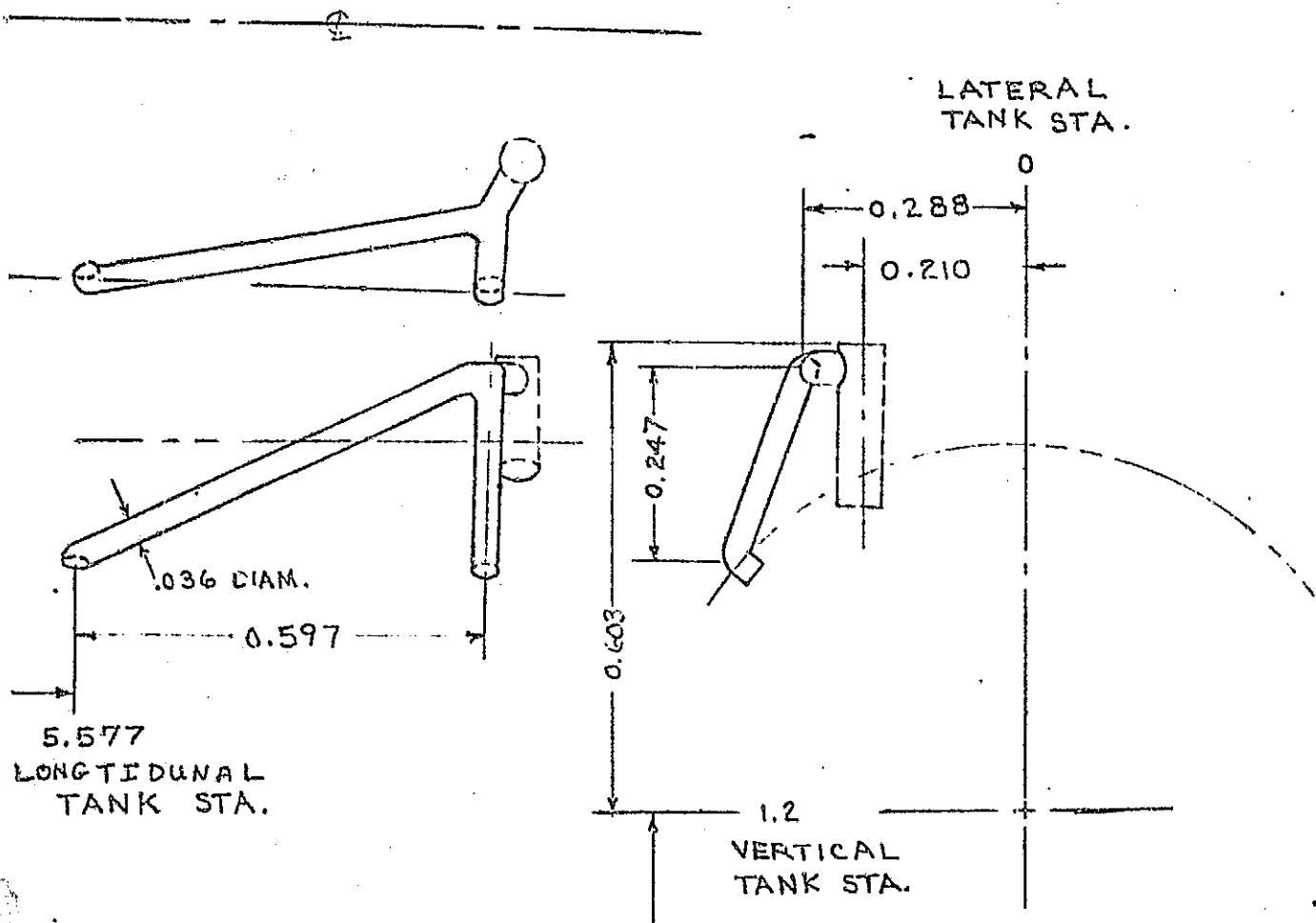


TABLE III. (Continued)

MODEL COMPONENT: ATTACH STRUCTURE - AT7

GENERAL DESCRIPTION: RIGHT REAR ORBITER/ET ATTACH STRUCTURE (3 MEMBERS)

MODEL SCALE: 0.003

REFERENCE DRAWING: VL78-000050

ALL DIMENSIONS IN INCHES MODEL SCALE

DIAMETERS 0.036

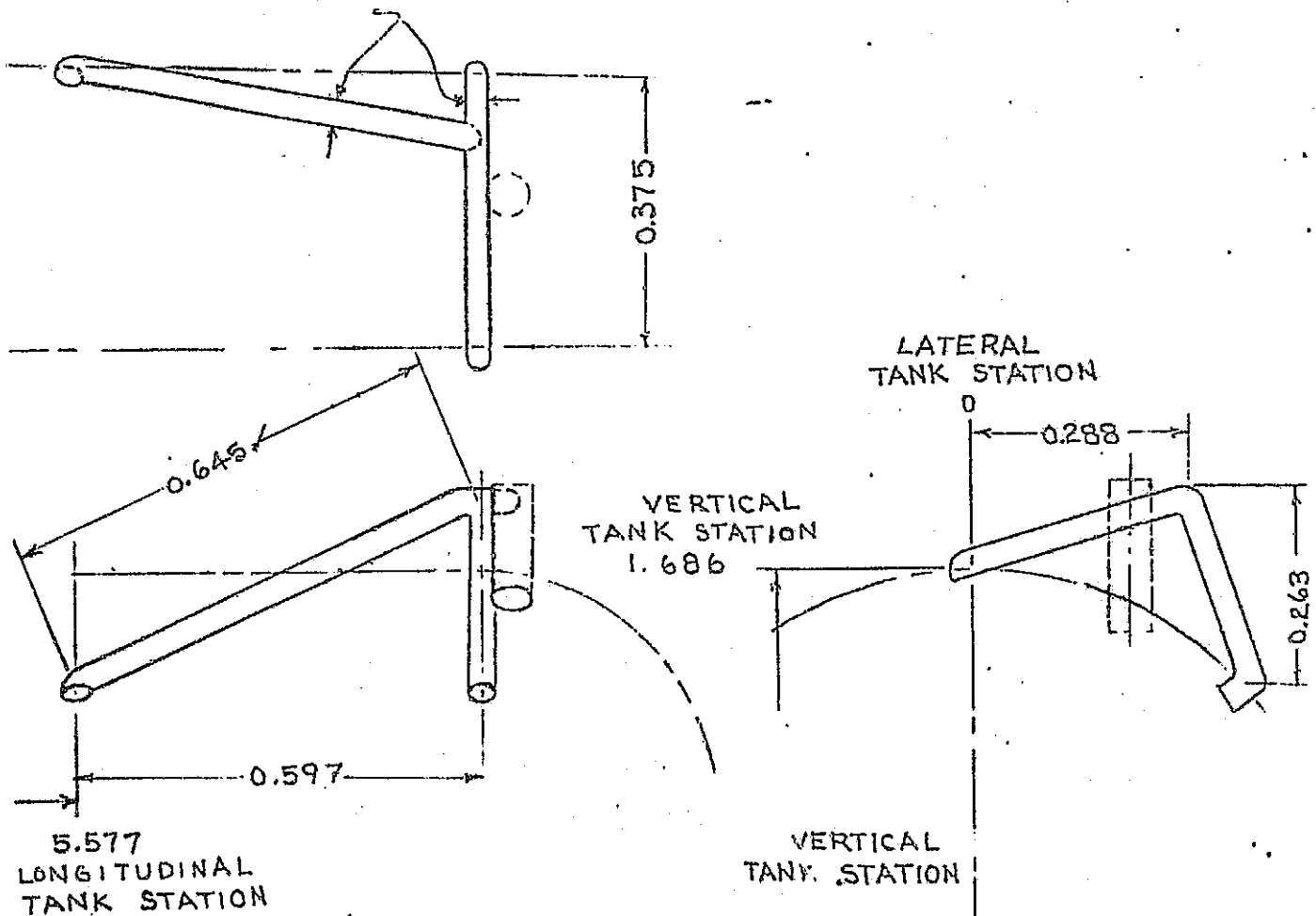


TABLE III. (Continued)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>8</sub>

GENERAL DESCRIPTION: FORWARD SRB/ET ATTACH STRUCTURE (ET PORTION TESTED ONLY)

MODEL SCALE: 0.003

REFERENCE DRAWING: VL77-000051A

ALL DIMENSIONS IN INCHES MODEL SCALE

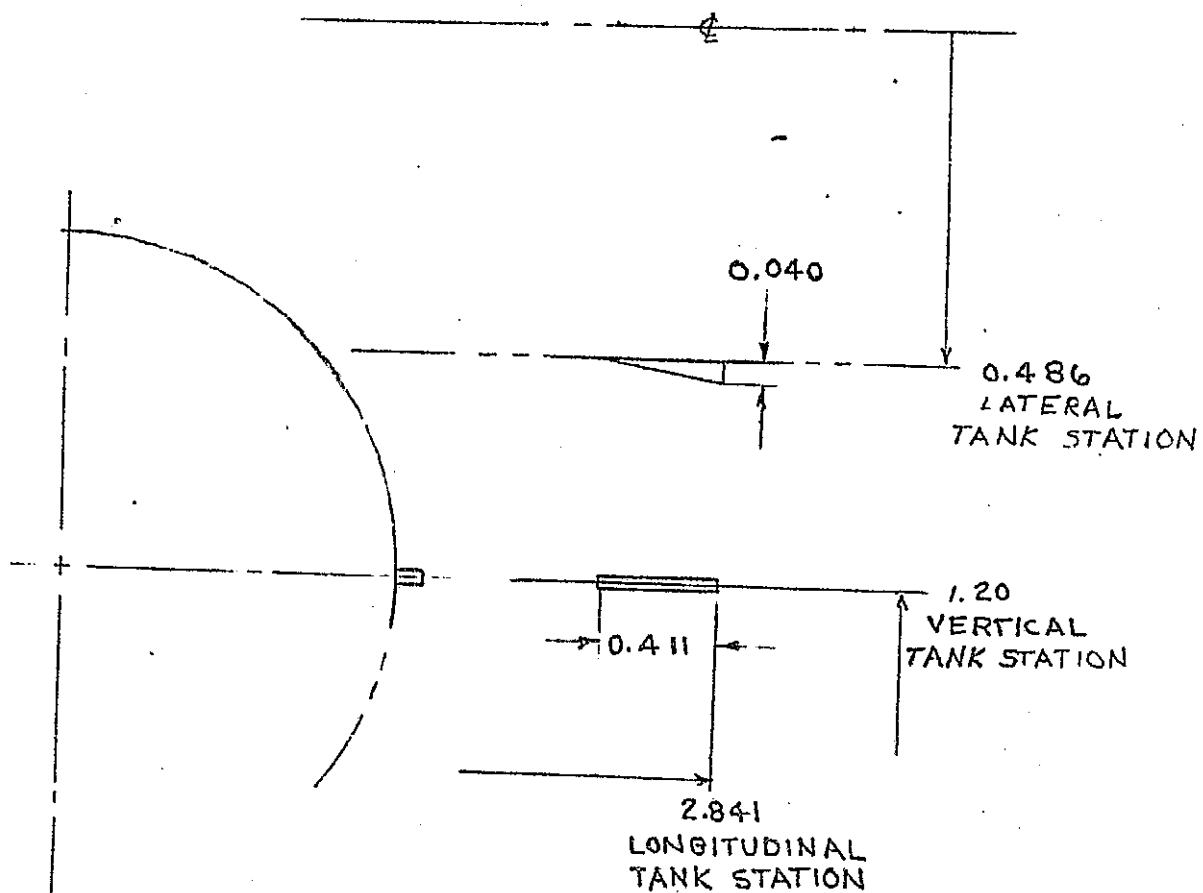


TABLE III. (Continued)

MODEL COMPONENT: ATTACH STRUCTURE - AT<sub>9</sub>

GENERAL DESCRIPTION: AFT SRB/ET ATTACH STRUCTURE (3 MEMBERS) (ET PORTION TESTED ONLY)

MODEL SCALE: 0.003

REFERENCE DRAWING: VL72-000106

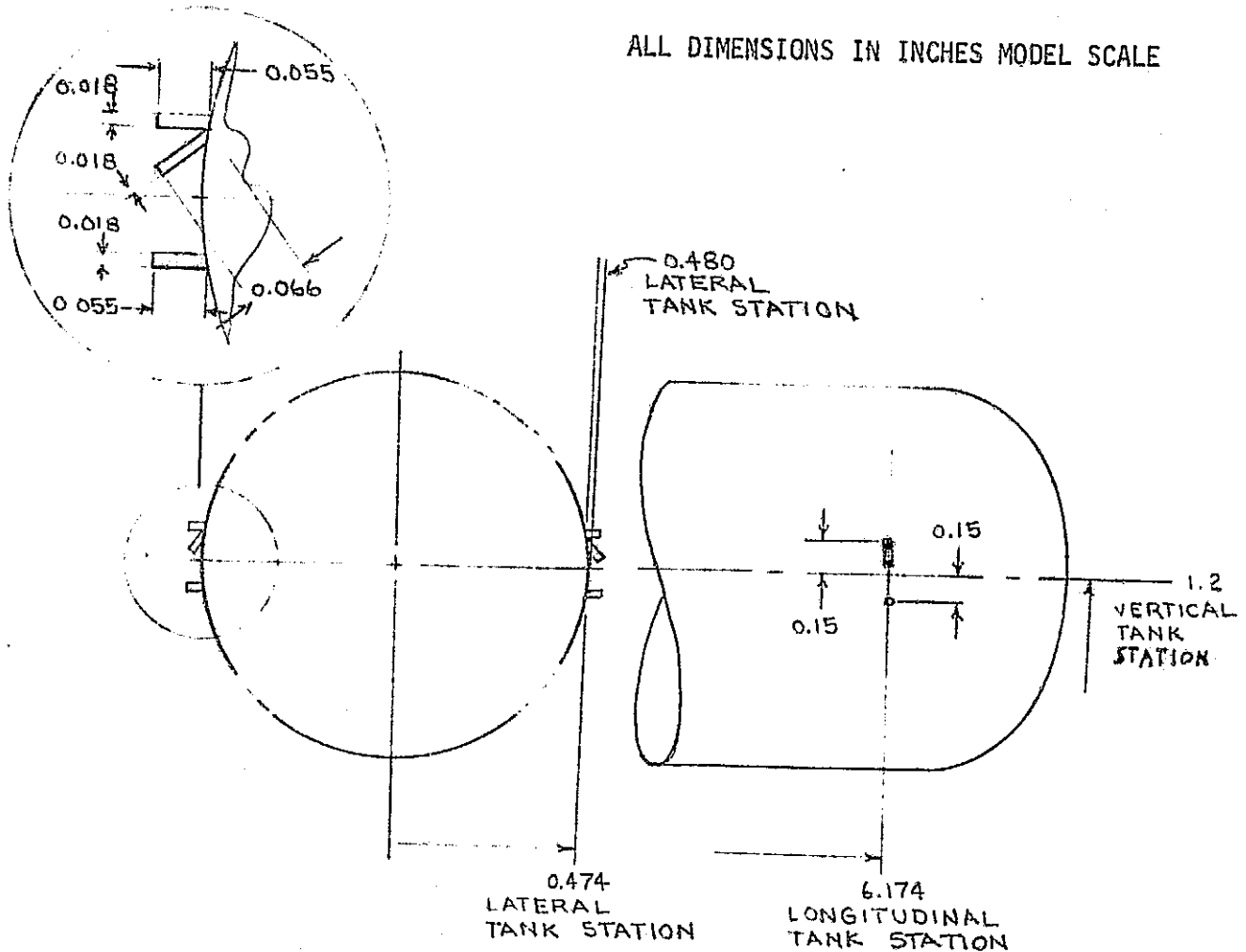


TABLE III. (Continued)

MODEL COMPONENT: LOX VENT LINE FAIRING - PT.

GENERAL DESCRIPTION: VENT LINE ALONG UPPER RIGHT SIDE OF ET OGIVE NOSE

BEGINNING AT MODEL STATIONS  $X_T = 0.927$ ,  $Y_T = 0$ , AND  $Z_T = 1.2$ ; TERMINATING AT  
 $X_T = 2.841$ ,  $Y_T = 0.162$ ,  $Z_T = 1.658$

MODEL SCALE: 0.003

REFERENCE DRAWING: VL78-000031A

<u>DIMENSIONS:</u>	THEORETICAL	
	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Length	<u>638 in.</u>	<u>1.914 in.</u>
Max. Width	<u>17.7 in.</u>	<u>0.053 in.</u>
Max. Depth	<u>9.3 in.</u>	<u>0.028 in.</u>
Radial Position	<u>19 1/2°</u>	<u>19 1/2°</u>

TABLE III. (Continued)

MODEL COMPONENT: LOX FEED LINE - PT<sub>2</sub>GENERAL DESCRIPTION: LONGITUDINAL FUEL LINE ALONG UPPER RIGHT SIDE OF ETBEGINNING AT MODEL STATIONS  $X_T = 2.841$ ,  $-Y_T = 0.194$ , AND  $Z_T = 1.645$ ; TERMINATINGAT  $X_T = 6.116$ ,  $-Y_T = 0.194$ , AND  $Z_T = 1.645$ MODEL SCALE: 0.003REFERENCE DRAWING: VL78-000031A

<u>DIMENSIONS:</u>	<u>THEORETICAL</u>	
	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Length	<u>1092 in.</u>	<u>3.275 in.</u>
Max. Width	<u>30.7 in.</u>	<u>0.092 in.</u>
Max. Height	<u>28 in.</u>	<u>0.084 in.</u>
Radial Position	<u>23 1/2°</u>	<u>23 1/2°</u>

TABLE III. (Continued)

MODEL COMPONENT: LH<sub>2</sub> FEED LINE - PT<sub>3</sub>

GENERAL DESCRIPTION: LONGITUDINAL FUEL LINE ALONG UPPER LEFT SIDE OF ET

BEGINNING AT MODEL STATIONS X<sub>T</sub> = 2.841, Y<sub>T</sub> = 0.275, AND Z<sub>T</sub> = 1.601

TERMINATING AT STATIONS X<sub>T</sub> = 6.116, Y<sub>T</sub> = 0.275, AND Z<sub>T</sub> = 1.601

MODEL SCALE: 0.003

REFERENCE DRAWING: VL78-000031A

<u>DIMENSIONS:</u>	THEORETICAL	
	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Length	<u>1092 in.</u>	<u>3.275 in.</u>
Max. Width	<u>25.7 in.</u>	<u>0.077 in.</u>
Max. Depth	<u>14.7 in.</u>	<u>0.044 in.</u>
Radial Position	<u>-33°</u>	<u>-33°</u>



TABLE III. (Continued)

MODEL COMPONENT: LOX FEED LINE - FL<sub>1</sub>

GENERAL DESCRIPTION: 18-INCH DIAMETER VERTICAL FUEL LINE AT AFT END OF ET ON  
RIGHT

MODEL SCALE: 0.003

REFERENCE DRAWING: VL78-000050

ALL DIMENSIONS IN INCHES MODEL SCALE

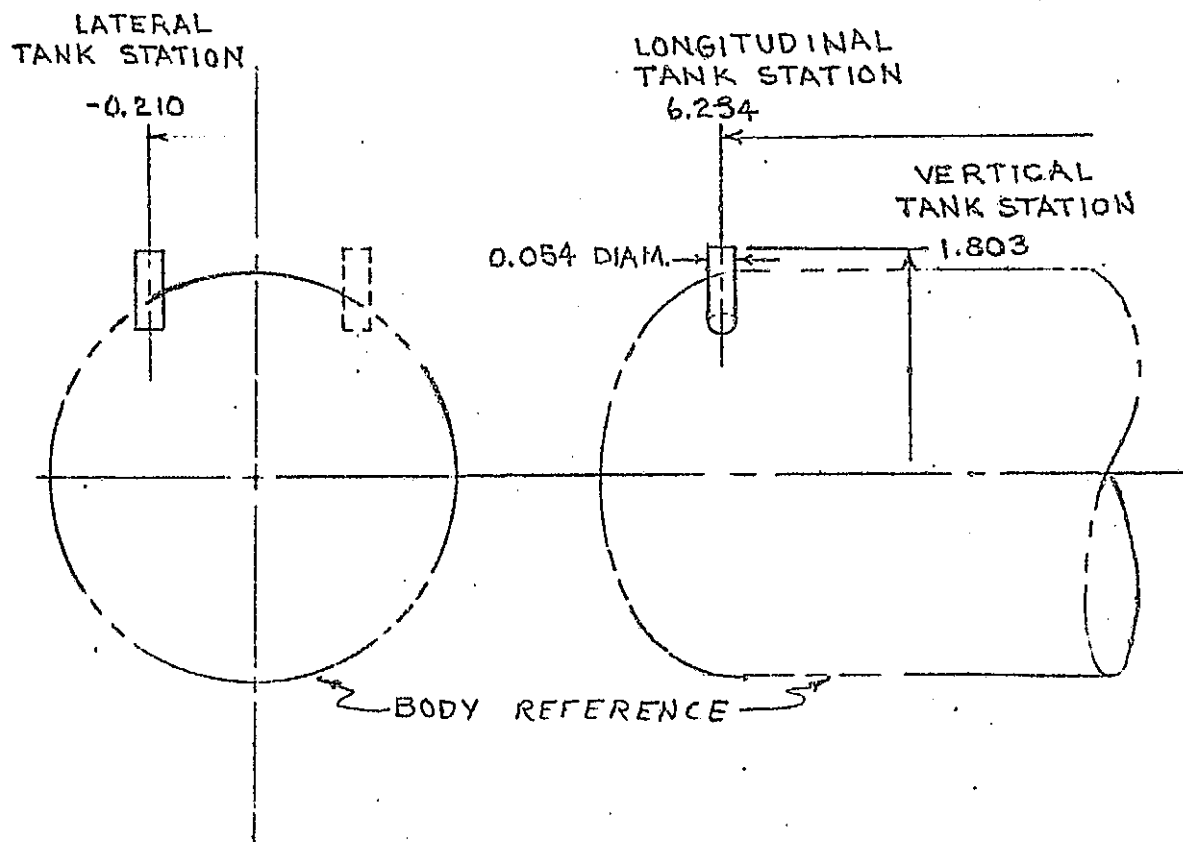


TABLE III. (Continued)

MODEL COMPONENT: LH<sub>2</sub> FEED LINE - FL<sub>2</sub>

GENERAL DESCRIPTION: 18-INCH DIAMETER VERTICAL FUEL LINE AT AFT END OF ET  
ON LEFT

MODEL SCALE: 0.003

REFERENCE DRAWING: VL78-000050

ALL DIMENSIONS IN INCHES MODEL SCALE

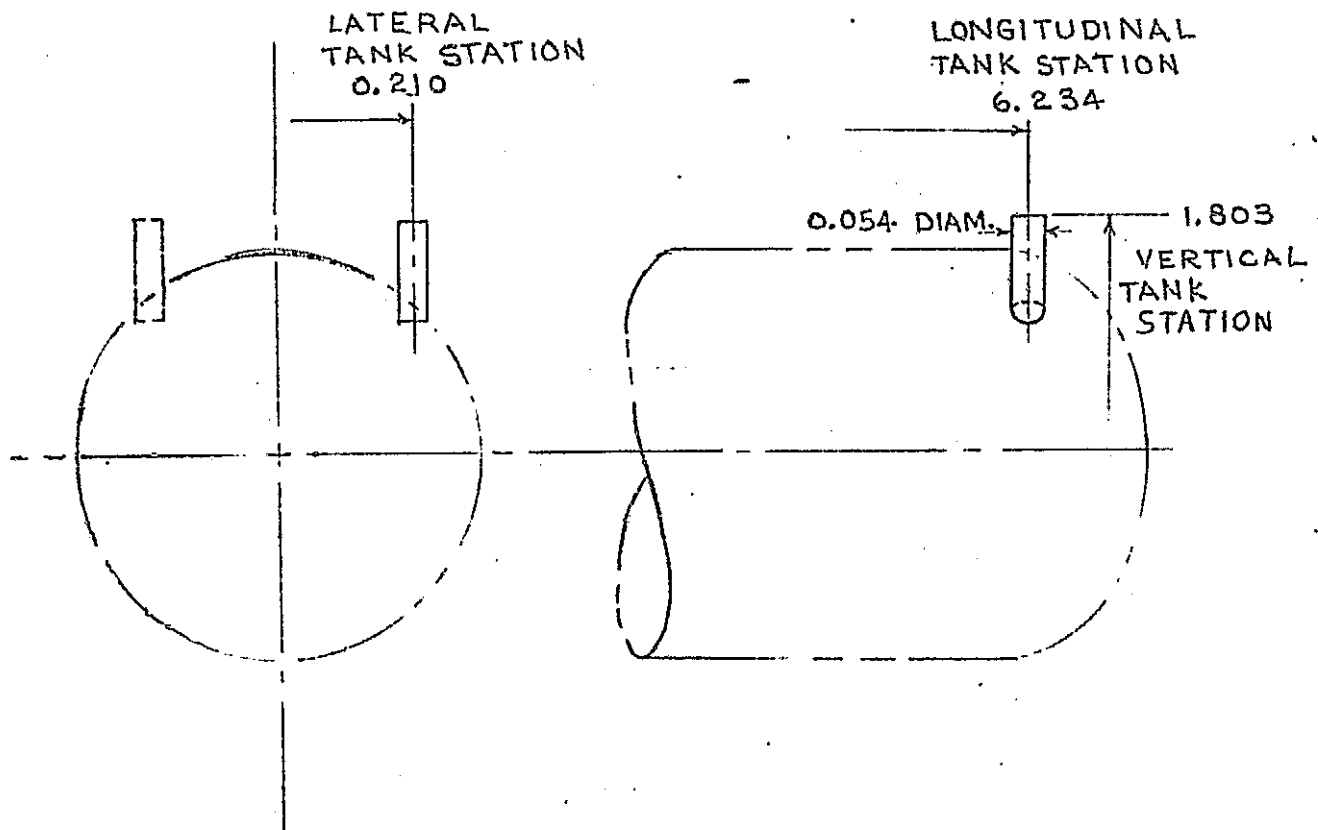


TABLE III. (Concluded)

MODEL COMPONENT: ATTACH STRUCTURE - FR<sub>6</sub>

GENERAL DESCRIPTION: AFT ET/ORBITER CROSS MEMBER (CROSS SECTION 11 IN. x 15 IN.)

LOCATED AT ET-STATION 205D.5

MODEL SCALE: 0.003

REFERENCE DRAWING: FIGURE 3, MARTIN MARIETTA MEMO SA-A-74-9

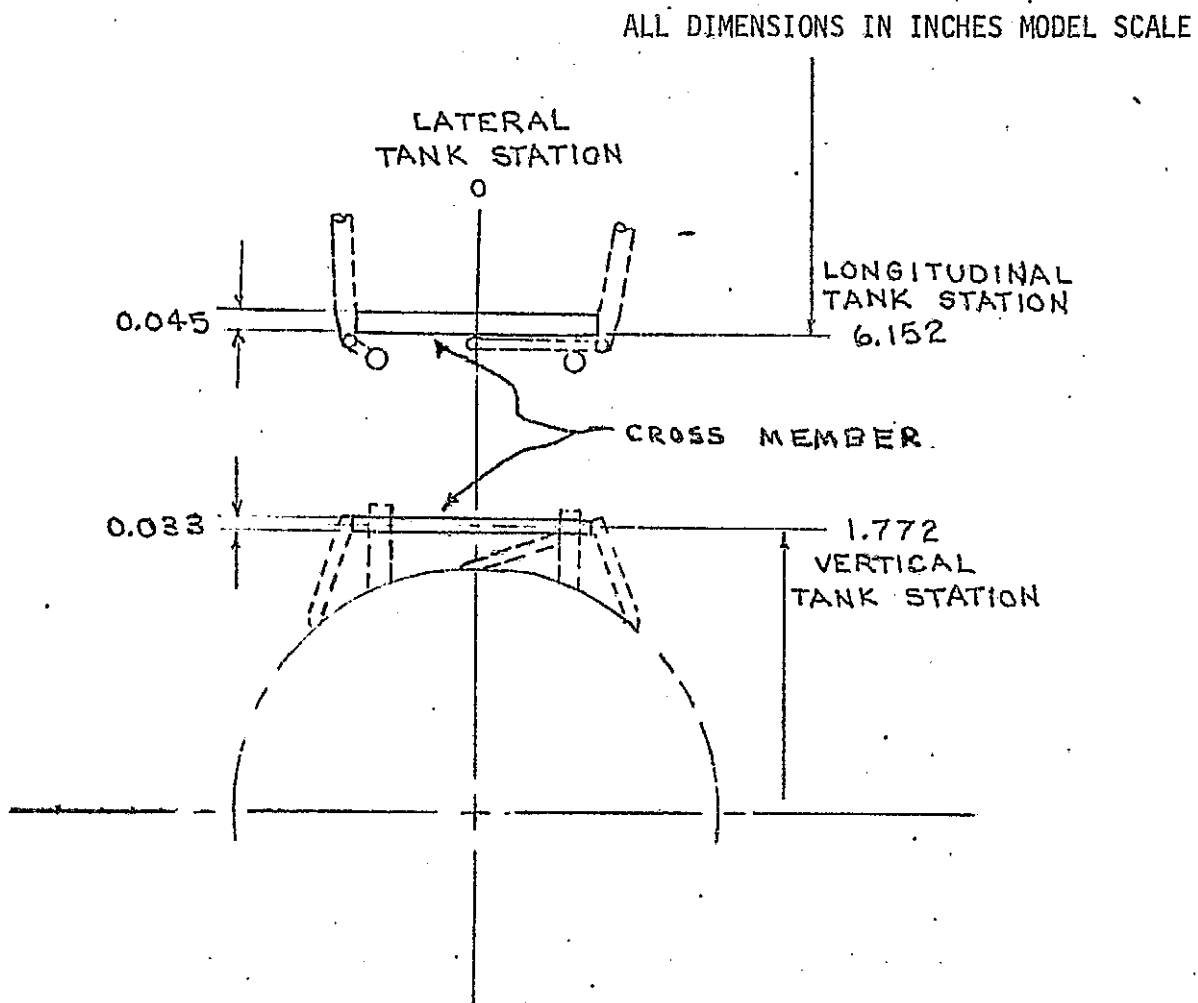


TABLE IV. TABULATED DATA PRINT-OUT FORMAT AND CORRELATION BETWEEN TUBE NUMBER, ORIFICE NUMBER, AND ORIFICE LOCATION ON MODEL

\*inoperable orifice

SIDE-MOUNTED ET (T<sub>2</sub> CONFIGURATION)

	0.055	0.108	0.162	0.216	0.322	0.518	0.610	0.735	0.860	0.892	0.923	0.954
0.305	0.605	0.905	1.205	1.800	2.900	3.410	4.810	4.985	5.160	5.335		
1	2	3	4	5	6	7	8	9	10	11	12	
A	1	2	3	4	5	*6	*7	8	9	10	11	12
B	13	14	15	16	*17	*18	19	20	21	22	23	
C								24	25	26	27	
D	28	29	30	31	32	33	34	35	36	37	38	39
E	40	41	42	43	44	45	46	47	48	49	50	
F	51	52	53	54	55	56	57	58	59	60	61	62
G		63	64	65	66	67	68	69	70	71	72	73
H	74	75	76	77	78	79	80	81	82	83	84	85
I		86	87	88	89	90	91	92	93	94	95	96
J	97	98	99	100	101	102	103	104	105	106	107	108
K		109	110	111	112	113	114	115	116	117	118	119
L	120	121	122	123	124	125	126	127	128	129	130	131
M		132	133	134	135	136	137	138	139	140	141	142
N	143	144	145	146	147	148	149	150	151	152	153	154
O		155	156	157	158	159	160	161	162	163	164	165
P	166	167	168	169	170	171	172	173	174	175	176	177
Q									178	179	180	181
R		182	183	184	185	*186	*187	188	189	190	191	192

X/B  
LONG. STA. X (In.)  
LONG STA. NO.  
RADIAL ROW NO.  
RADIAL LOCATION  $\theta$   
(deg.)

TABLE IV. TABULATED DATA PRINT-OUT FORMAT AND CORRELATION BETWEEN TUBE NUMBER, ORIFICE NUMBER, AND ORIFICE LOCATION ON MODEL (CONCLUDED)

\* inoperable orifice

SIDE-MOUNTED ET (T<sub>2</sub> CONFIGURATION)

X/L	LONG. STA. X (In.)	LONG. STA. No.	CIRCUM. ROW	CIRCUM. STA. $\theta$ (deg.)	0.055	0.108	0.162	0.216	0.322	0.518	0.610	0.735	0.860	0.892	0.923	0.954
O	A	1	1	1	0.055	0.108	0.162	0.216	0.322	0.518	0.610	0.735	0.860	0.892	0.923	0.954
14	B	2	2	2	0.305	0.605	0.905	1.205	1.800	2.900	3.410	4.110	4.810	4.985	5.160	5.335
24	C	3	3	3	1	2	3	4	5	6	7	8	9	10	11	12
45	D	4	4	4	1	2	3	4	5	* 6	* 7	8	9	10	11	12
67½	E	5	5	5	1	2	3	4	5	* 6	* 7	8	9	10	11	12
90	F	6	6	6	1	2	3	4	5	* 6	* 7	8	9	10	11	12
112½	G	7	7	7	1	2	3	4	5	* 6	* 7	8	9	10	11	12
135	H	8	8	8	1	2	3	4	5	* 6	* 7	8	9	10	11	12
157½	I	9	9	9	1	2	3	4	5	* 6	* 7	8	9	10	11	12
180	J	10	10	10	1	2	3	4	5	* 6	* 7	8	9	10	11	12
202½	K	11	11	11	1	2	3	4	5	* 6	* 7	8	9	10	11	12
225	L	12	12	12	1	2	3	4	5	* 6	* 7	8	9	10	11	12
247½	M	13	13	13	1	2	3	4	5	* 6	* 7	8	9	10	11	12
270	N	14	14	14	1	2	3	4	5	* 6	* 7	8	9	10	11	12
292½	O	15	15	15	1	2	3	4	5	* 6	* 7	8	9	10	11	12
315	P	16	16	16	1	2	3	4	5	* 6	* 7	8	9	10	11	12
326	Q	17	17	17	1	2	3	4	5	* 6	* 7	8	9	10	11	12
346	R	18	18	18	1	2	3	4	5	* 6	* 7	8	9	10	11	12

TABLE V. TABULATED DATA PRINT-OUT FORMAT AND CORRELATION BETWEEN TUBE NUMBER, ORIFICE NUMBER, AND ORIFICE LOCATION ON MODEL

TABLE V. TABULATED DATA PRINT-OUT FORMAT AND CORRELATION BETWEEN TUBE NUMBER, ORIFICE NUMBER, AND ORIFICE LOCATION ON MODEL																
TAIL-MOUNTED ET (7, CONFIGURATION)																
X/2	LONG. STA. X (in.)	LONG. STA. NO.	RADIAL ROW NO.	RADIAL LOCATION $\theta$ (deg.)	0.055	0.108	0.162	0.216	0.322	0.518	0.610	0.735	0.860	0.892	0.923	0.954
14	A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
24	B	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
45	C	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
67½	D	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
90	E	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
112½	F	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
135	G	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
157½	H	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
180	I	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
202½	J	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123
225	K	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134
247½	L	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146
270	M	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157
292½	N	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169
315	O	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
326	P	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192
346	Q	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204

TABLE V. TABULATED DATA PRINT-OUT FORMAT AND CORRELATION BETWEEN TUBE NUMBER, ORIFICE NUMBER, AND ORIFICE LOCATION ON MODEL (CONCLUDED)

TAIL-MOUNTED ET (T<sub>1</sub> CONFIGURATION)

\* inoperable orifice

	0.055	0.108	0.162	0.216	0.322	0.518	0.610	0.735	0.860	0.892	0.923	0.954
0.305	1	2	3	4	5	6	7	8	9	10	11	12
14	X	13	14	15	16	17	18	19	20	21	22	23
24	X	X	X	X	X	X	X	X	24	25	26	27
45	28	29	30	31	32	33	34	35	36	37	38	39
67½	X	40	41	42	43	44	45	46	47	48	49	50
90	51	52	53	54	55	56	57	58	59	60	61	62
112½	X	63	64	65	66	67	68	69	70	71	72	73
135	74	75	76	77	78	79	80	81	82	83	84	85
157½	X	86	87	88	89	90	91	92	93	94	95	96
180	97	98	99	100	101	102	103	104	105	106	107	108
202½	X	109	110	111	112	113	114	115	116	117	118	119
225	120	121	122	123	124	125	126	127	128	129	130	131
247½	X	132	133	134	135	136	137	138	139	140	141	142
270	143	144	145	146	147	148	149	150	151	152	153	154
292½	X	155	156	157	158	159	160	161	162	163	164	165
315	166	167	168	169	170	171	172	173	174	175	176	177
326	X	X	X	X	X	X	X	X	178	179	180	181
346	X	182	183	184	185	186	187	188	189	190	191	192

X/L
LONG. STA. X (in.)
LONG. STA. No.
CIRCUM. ROW
CIRCUM. STA θ(deg.)

Table VI.

0.003-SCALE 324-INCH ET REFERENCE DIMENSIONS

DIMENSION	FULL SCALE	MODEL SCALE
Reference Area, $S_{ref}$ (cross-sectional area of ET)	572.555 FT <sup>2</sup>	0.742 IN. <sup>2</sup>
Reference Length, $l_{ref}$ (ET diameter)	324 IN.	0.972 IN.
Reference Span, $b_{ref}$ (ET diameter)	324 IN.	0.972 IN.
Moment Reference Point, MRP (dry weight c.g.)		
XMRP (from nose)	1086.4 IN.	3.259 IN.
YMRP	0	0
ZMRP (model centerline)	400 IN.	1.2 IN.
Base Area, $A_b$ (cross-sectional area of ET)	572.555 FT <sup>2</sup>	0.742 IN. <sup>2</sup>



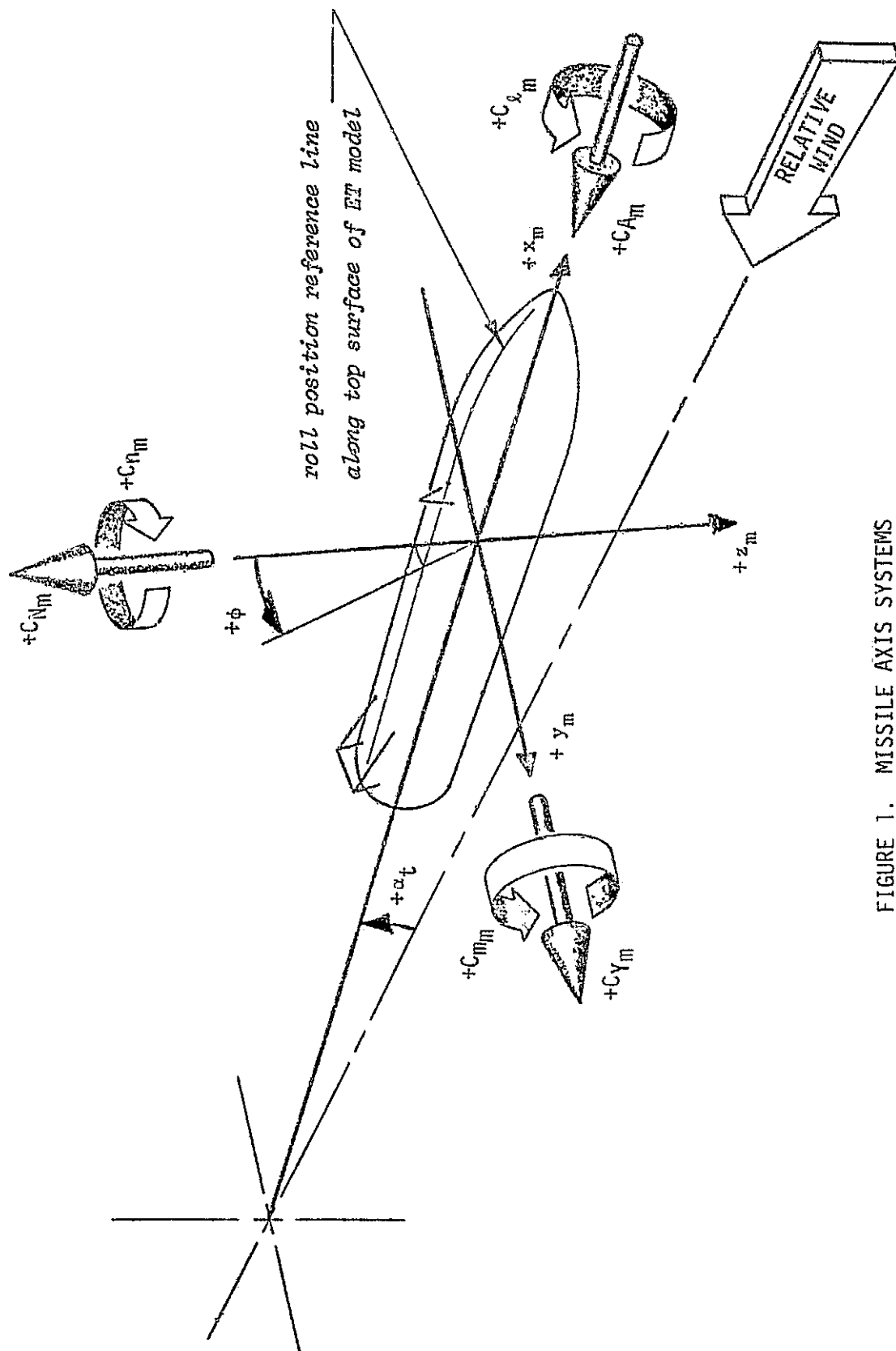
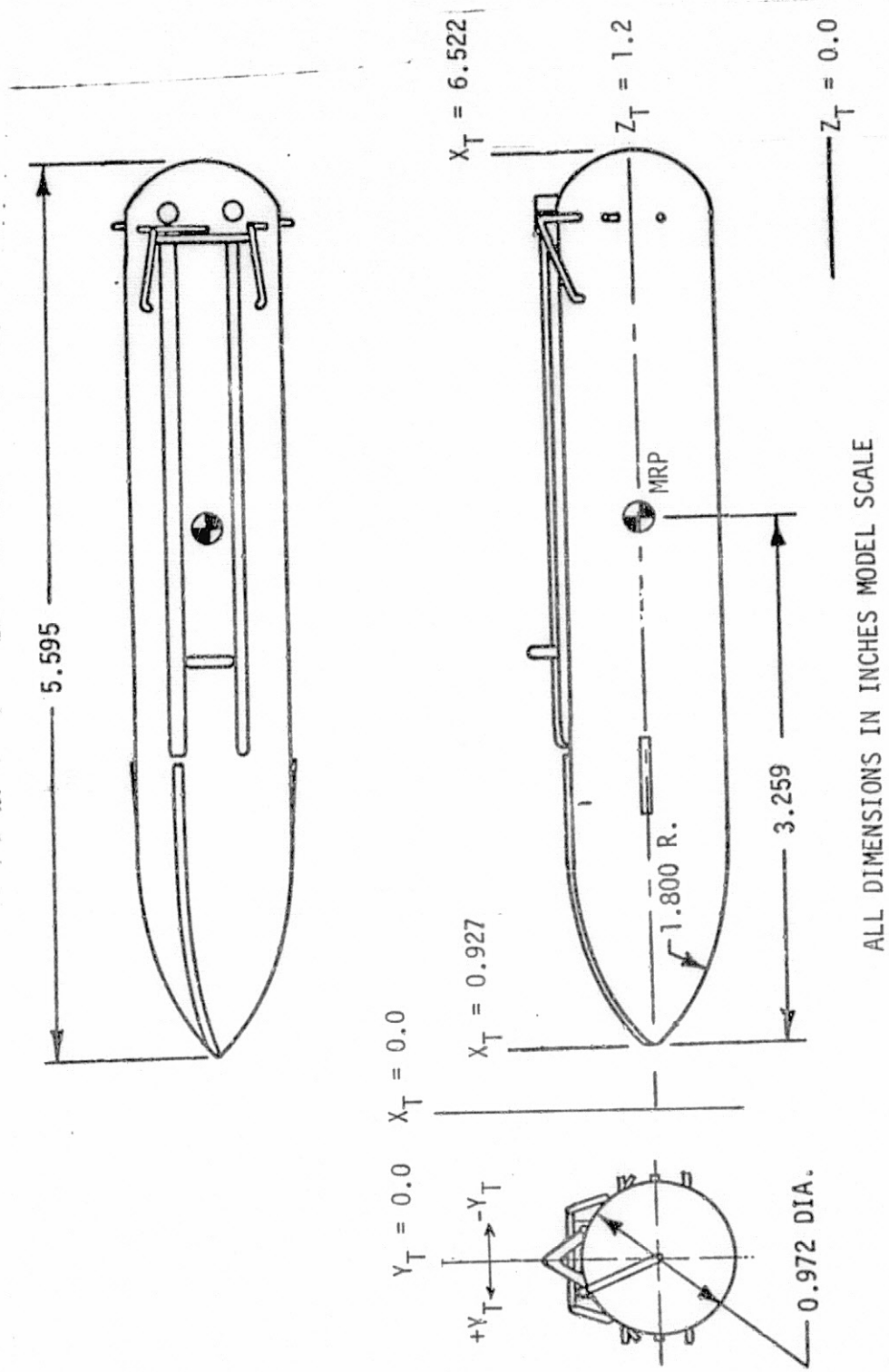
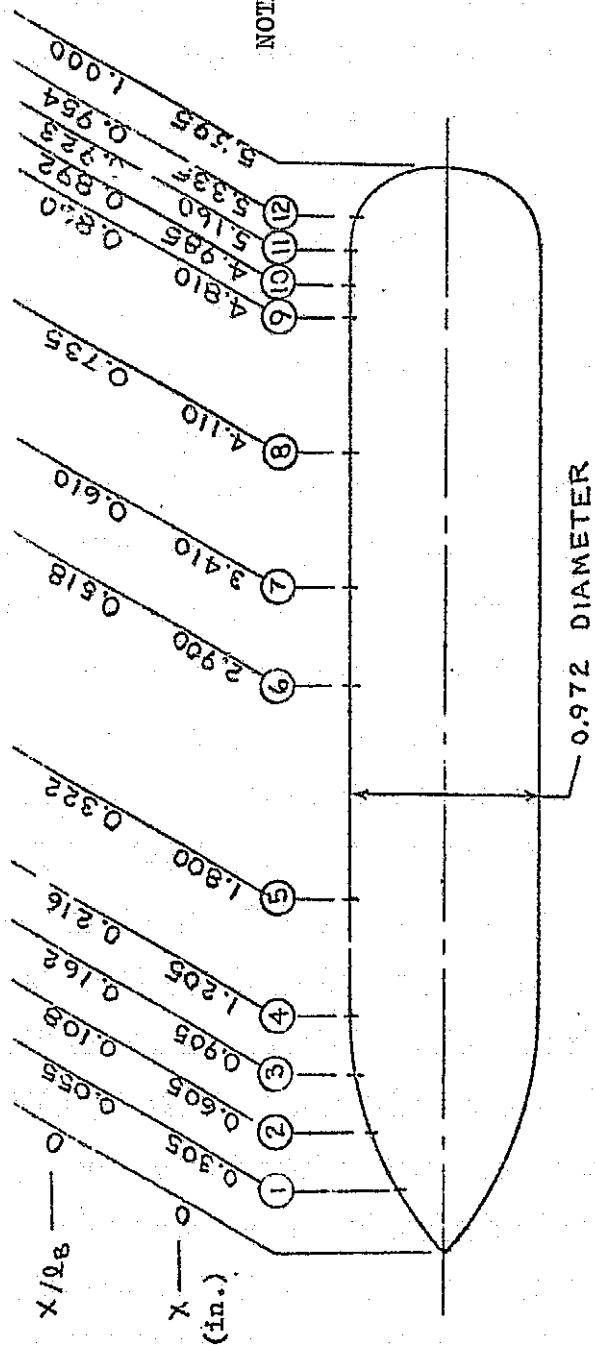


FIGURE 1. MISSILE AXIS SYSTEMS



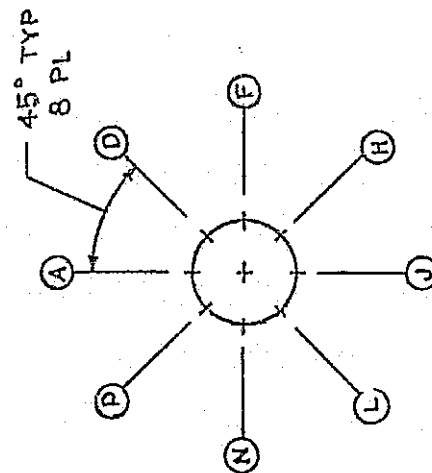
ALL DIMENSIONS IN INCHES MODEL SCALE

a. GENERAL ARRANGEMENT OF MSFC MODEL NO. 460, CONFIGURATION T<sub>1</sub> EXTERNAL TANK WITH PROTUBERANCES  
Figure 2. MODEL SKETCHES

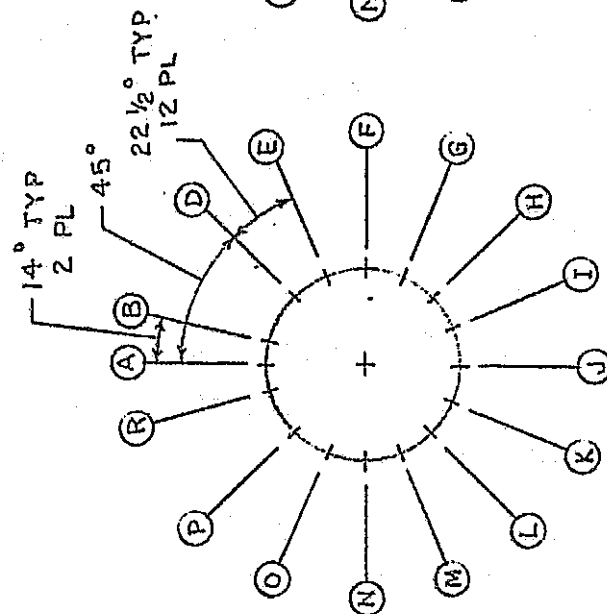


NOTE: ○ Denotes longitudinal and radial location of orifices. (192 total, though some may be missing due to sting cavities or protuberances.)

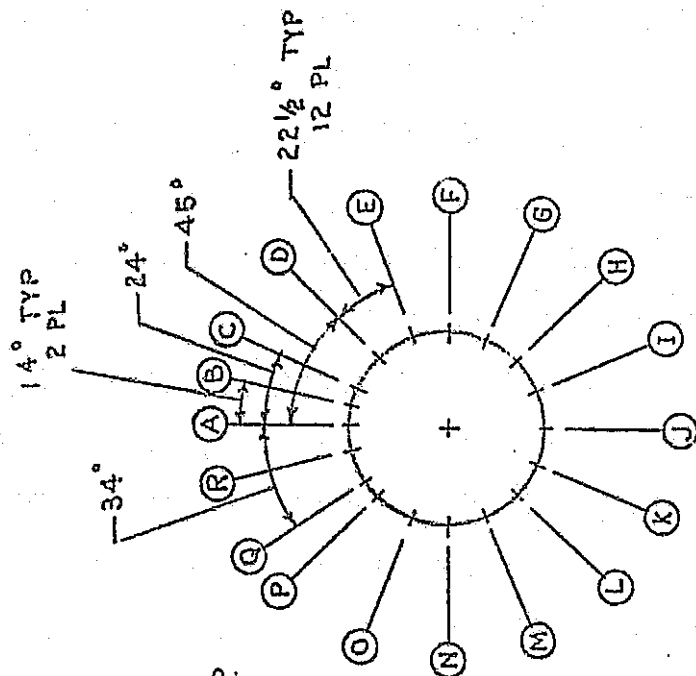
ALL SECTIONS  
LOOKING AFT



STATION 1



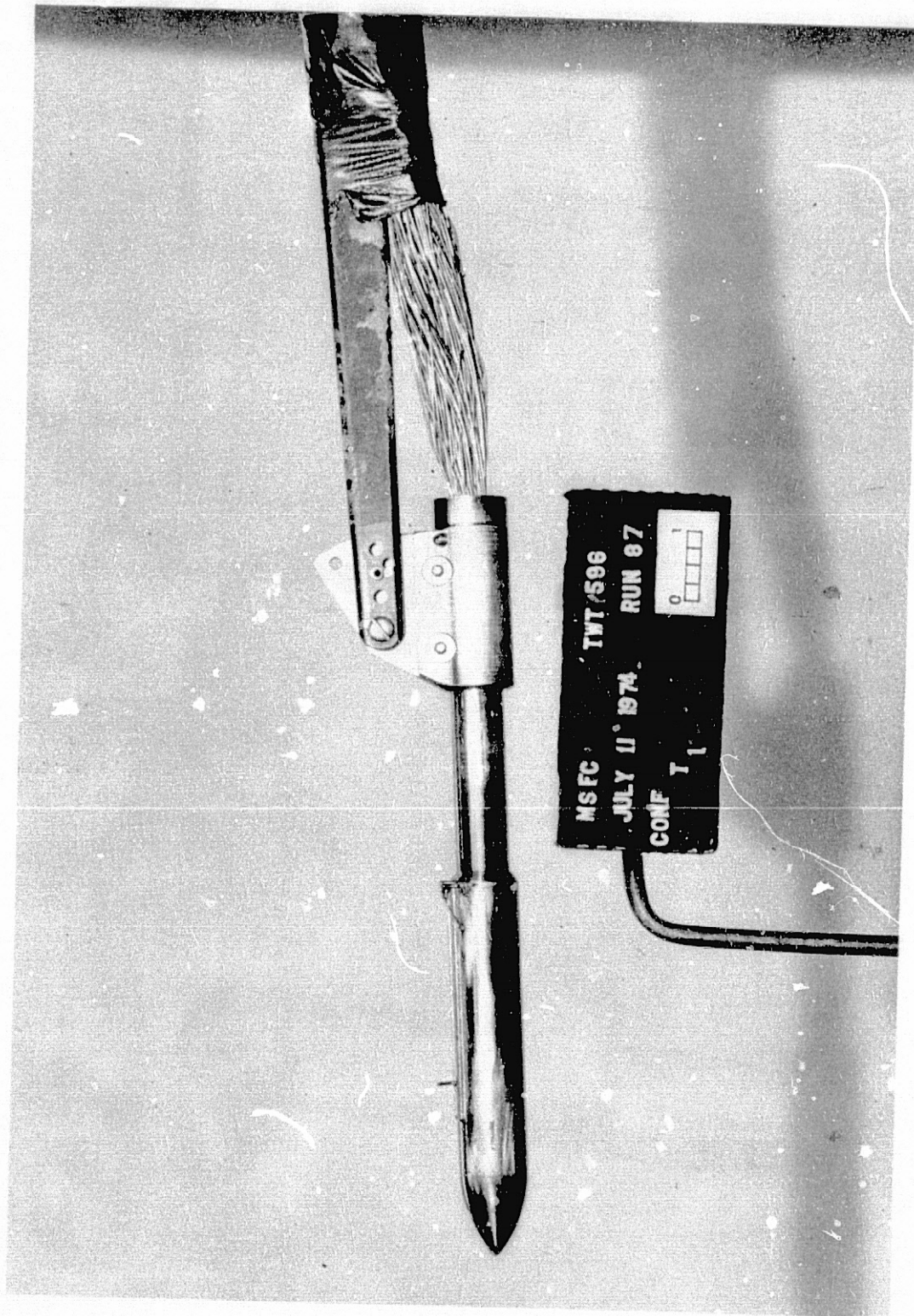
STATIONS 2 THRU 8



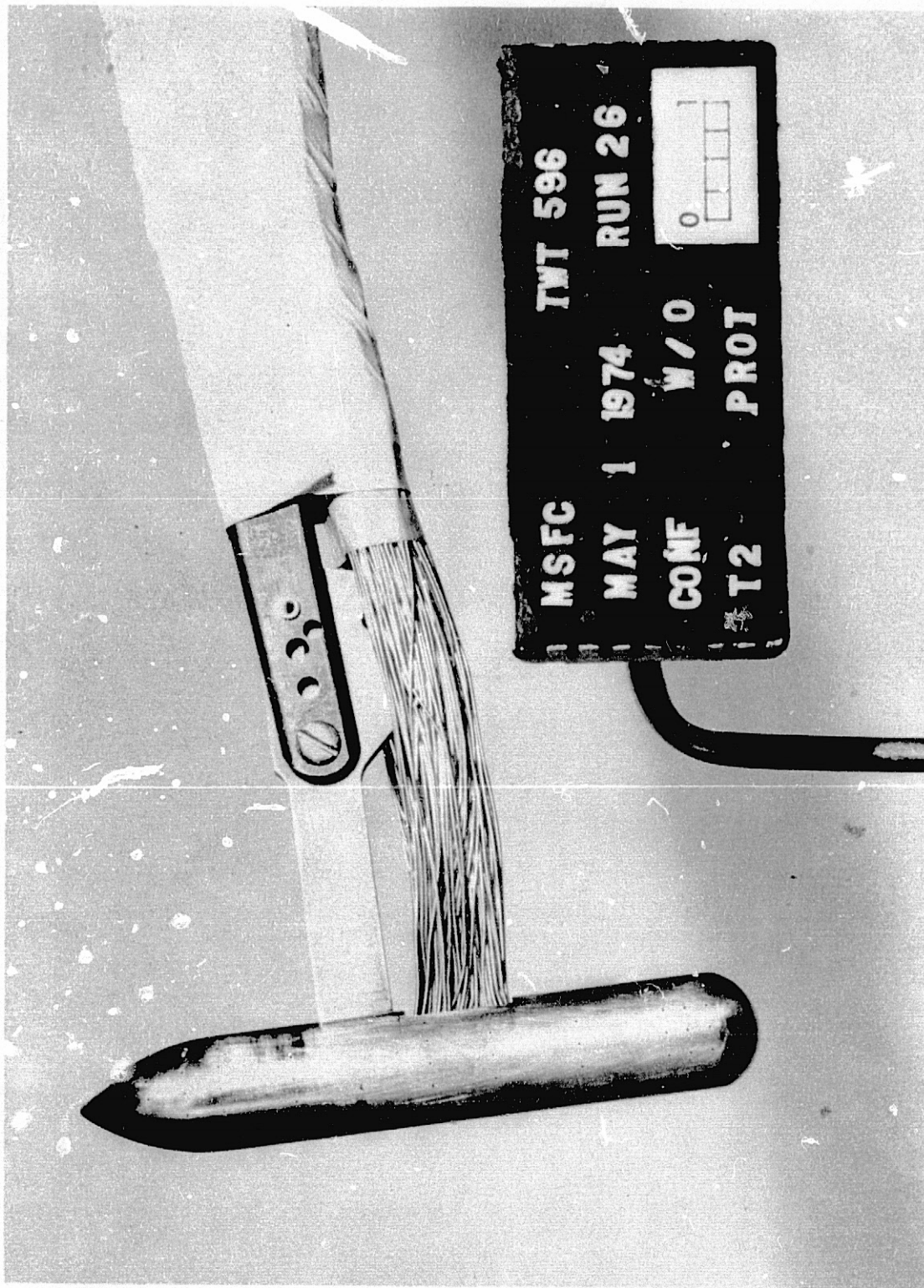
STATIONS 9 THRU 12

b. EXTERNAL TANK MODEL PRESSURE ORIFICE LOCATIONS

Figure 2. CONCLUDED



EXTERNAL TANK MODEL NO. 460, CONFIGURATION T<sub>1</sub> TAIL-MOUNTED WITH PROTUBERANCES  
Figure 3. MODEL PHOTOGRAPHS



b. EXTERNAL TANK MODEL NO. 460, CONFIGURATION T<sub>2</sub> SIDE-MOUNTED WITHOUT PROTUBERANCES  
Figure 2. CONCLUDED

#### DATA FIGURES

VOLUME 1--Pages 1-720  
VOLUME 2--Pages 721-1200  
VOLUME 3--Pages 1201-2000  
VOLUME 4--Pages 2001-2740



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA001)

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI .000

SYMBOL  
 THETA .000  
 ALPHA -8.380  
 MACH 1.960  
 14.000  
 24.000

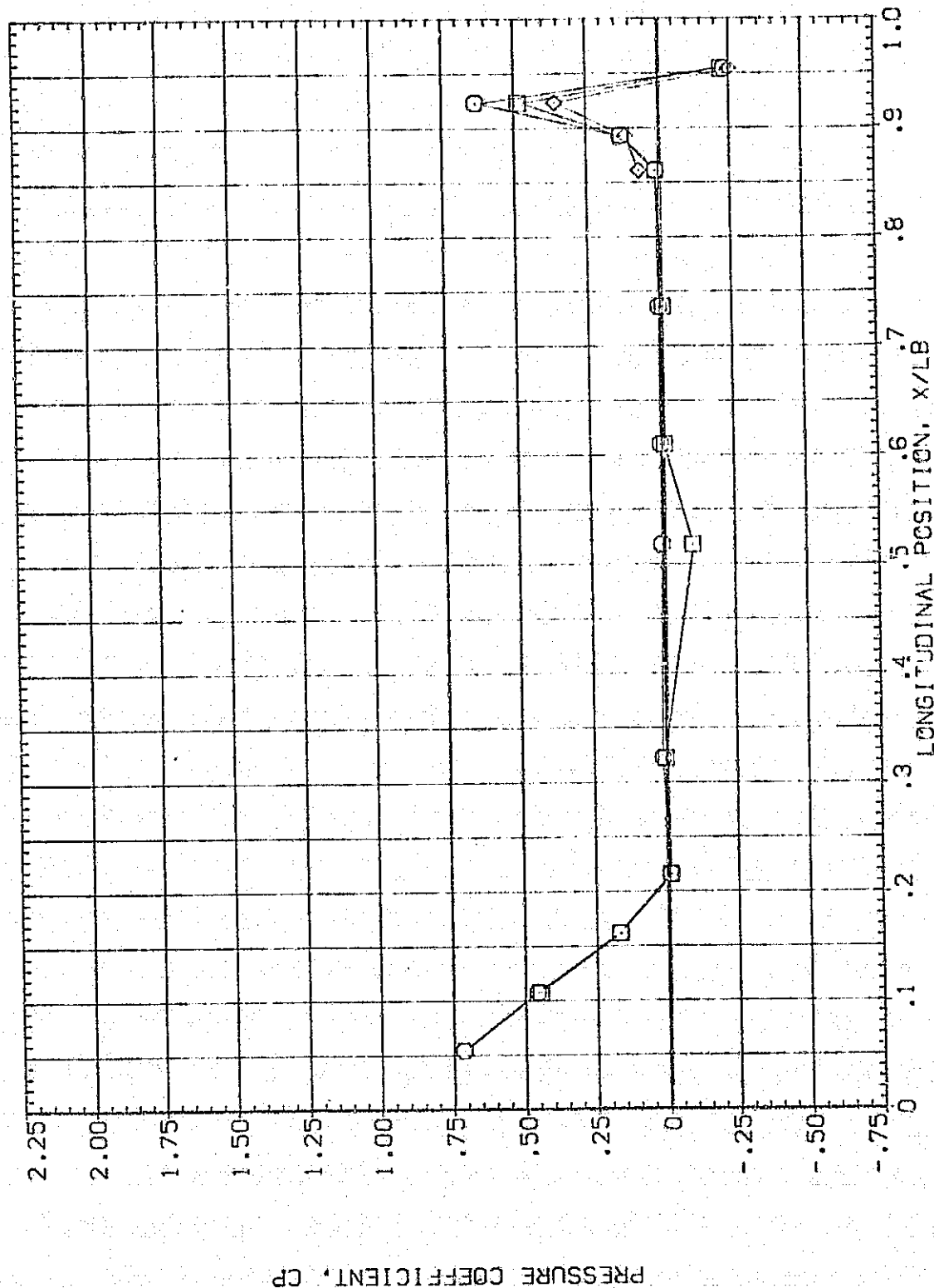


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 57.500  
 90.000

ALPHA  
 -8.380

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 .000 .000  
 1.000 OFF-SET PH1

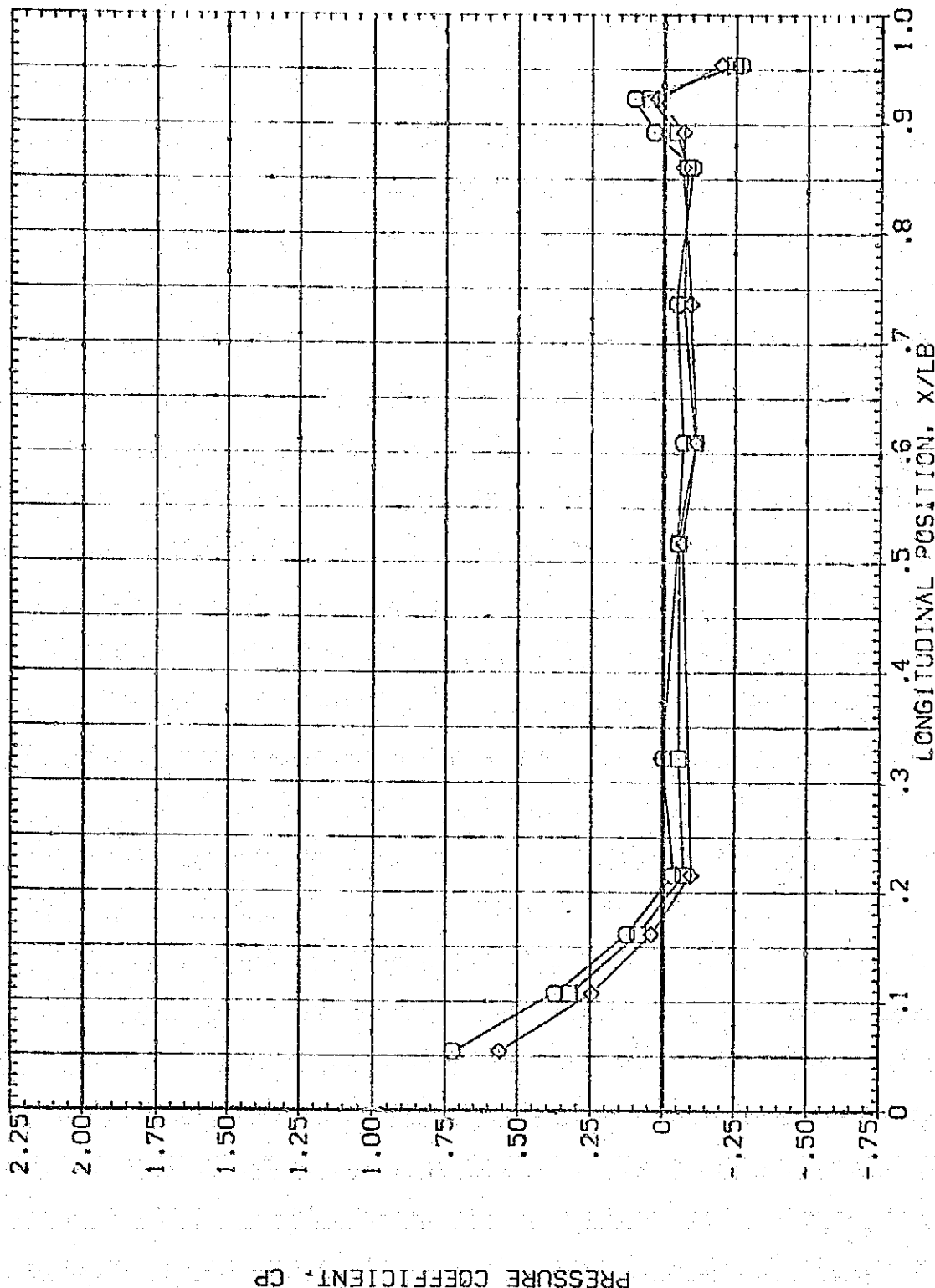


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL THETA ALPHA MACH  
 O 112.500 -8.380 1.960  
 □ 135.000  
 ◇ 157.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI .000

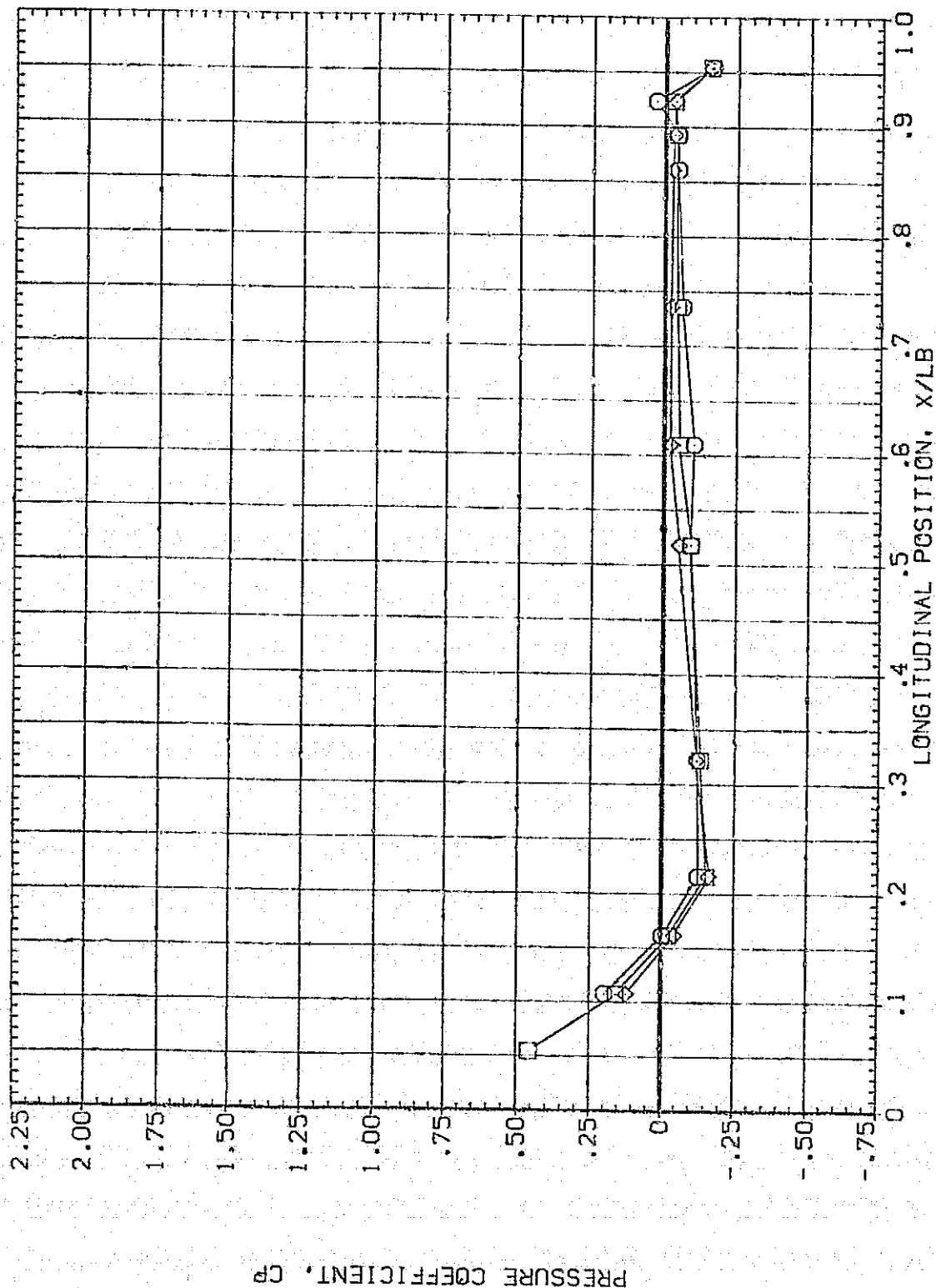


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
○	130.000	-8.380	1.960	BETA	.000	OFFSET
□	232.500			NOUNT	1.000	PHI
◇	225.000					

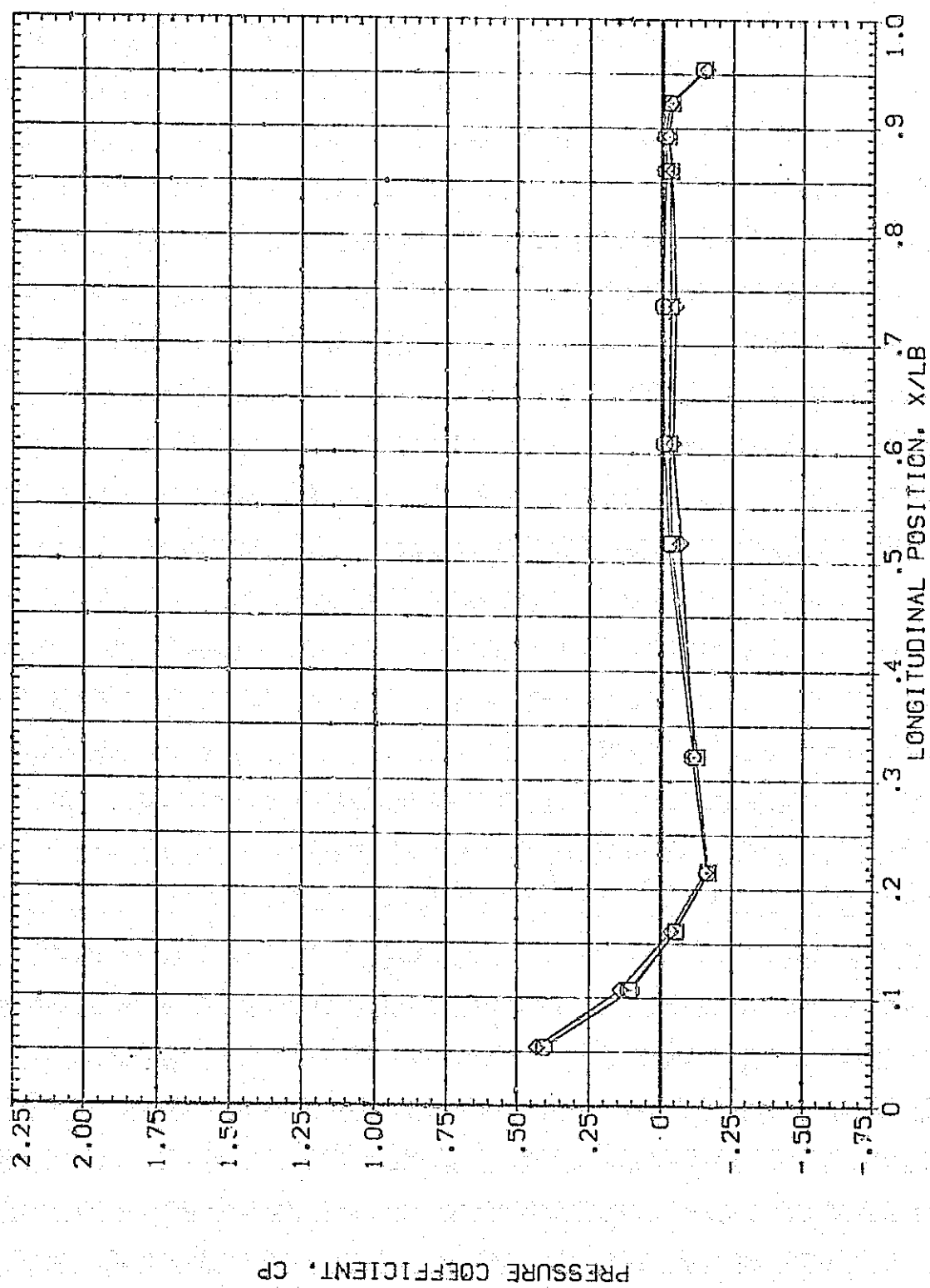


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A001)

SYMBOL    THETA    ALPHA    MACH  
 ○    247.500    -8.380    1.960  
 □    270.000  
 ◇    292.500

PARAMETRIC VALUES  
 BETA    .000    OFFSET    .000  
 MOUNT    1.000    PHI    .000

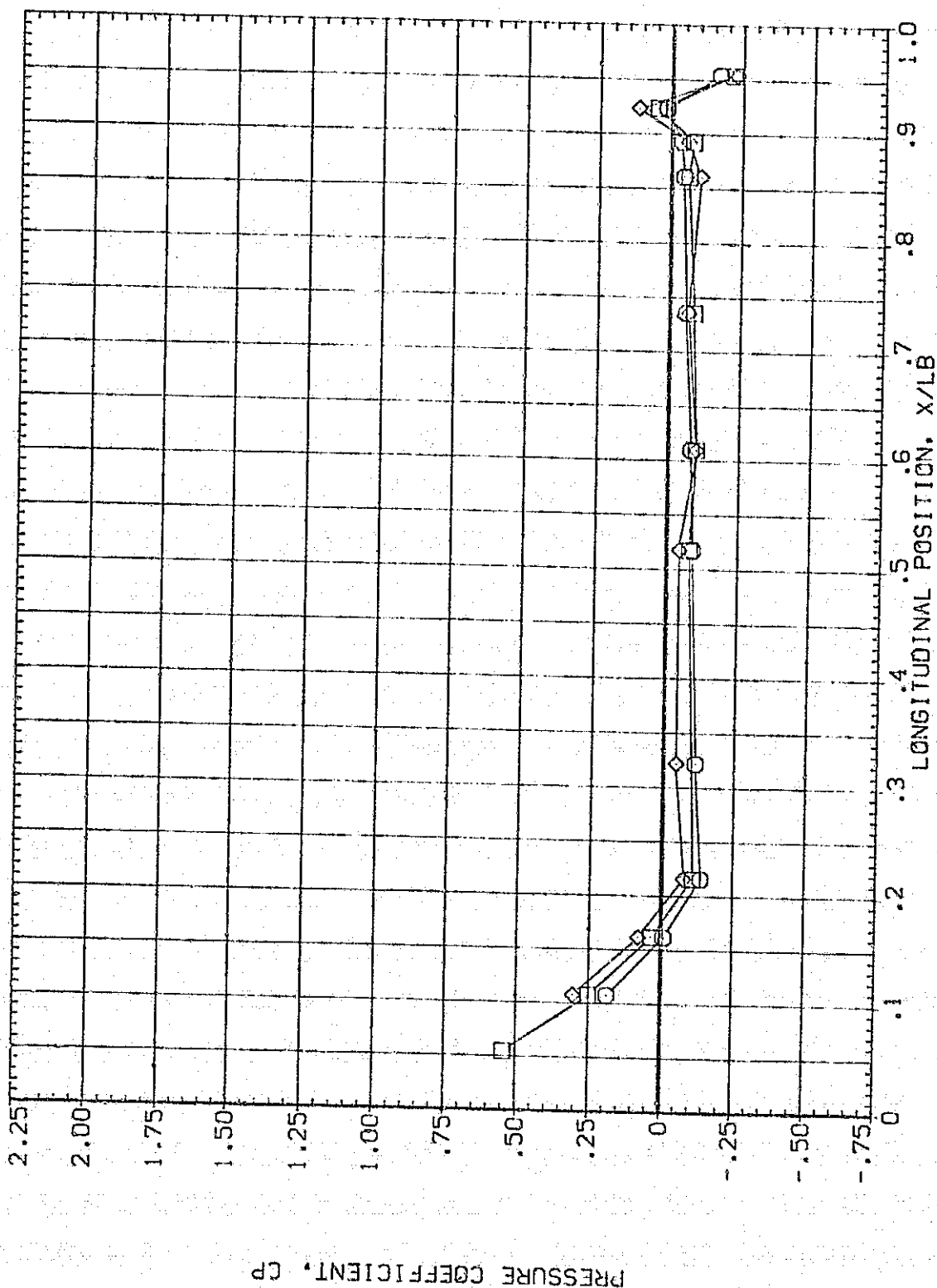


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	-8.390	1.960	HOUNT	.000
□	326.000			PHI	.000
◇	346.000				

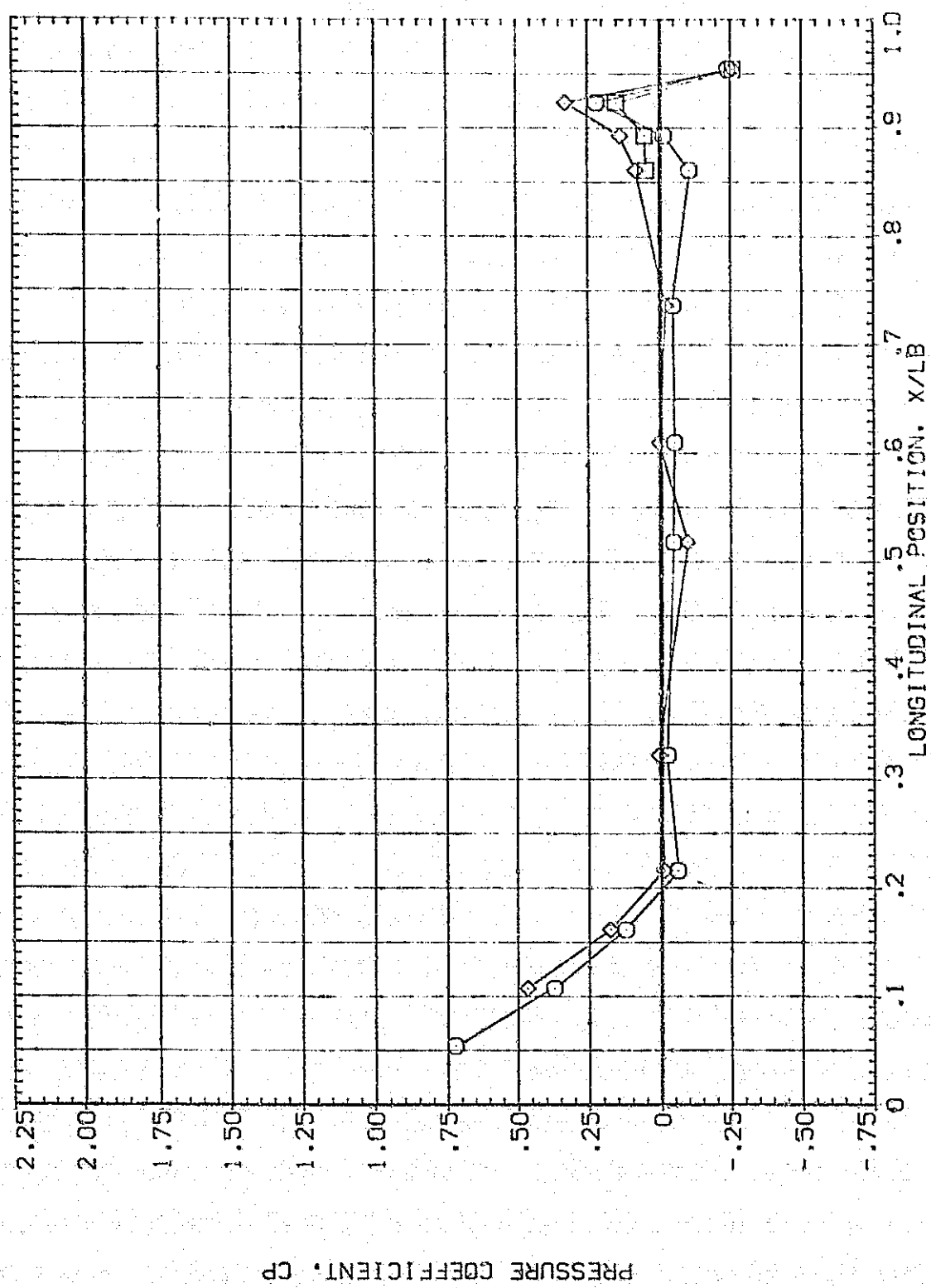


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIAQU2)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	.000	.000	-4.330	1.960	BETA	MDWT	.000	OFFSET	.000	PHI
○	14.000						1.000			
□	24.000									
◇										

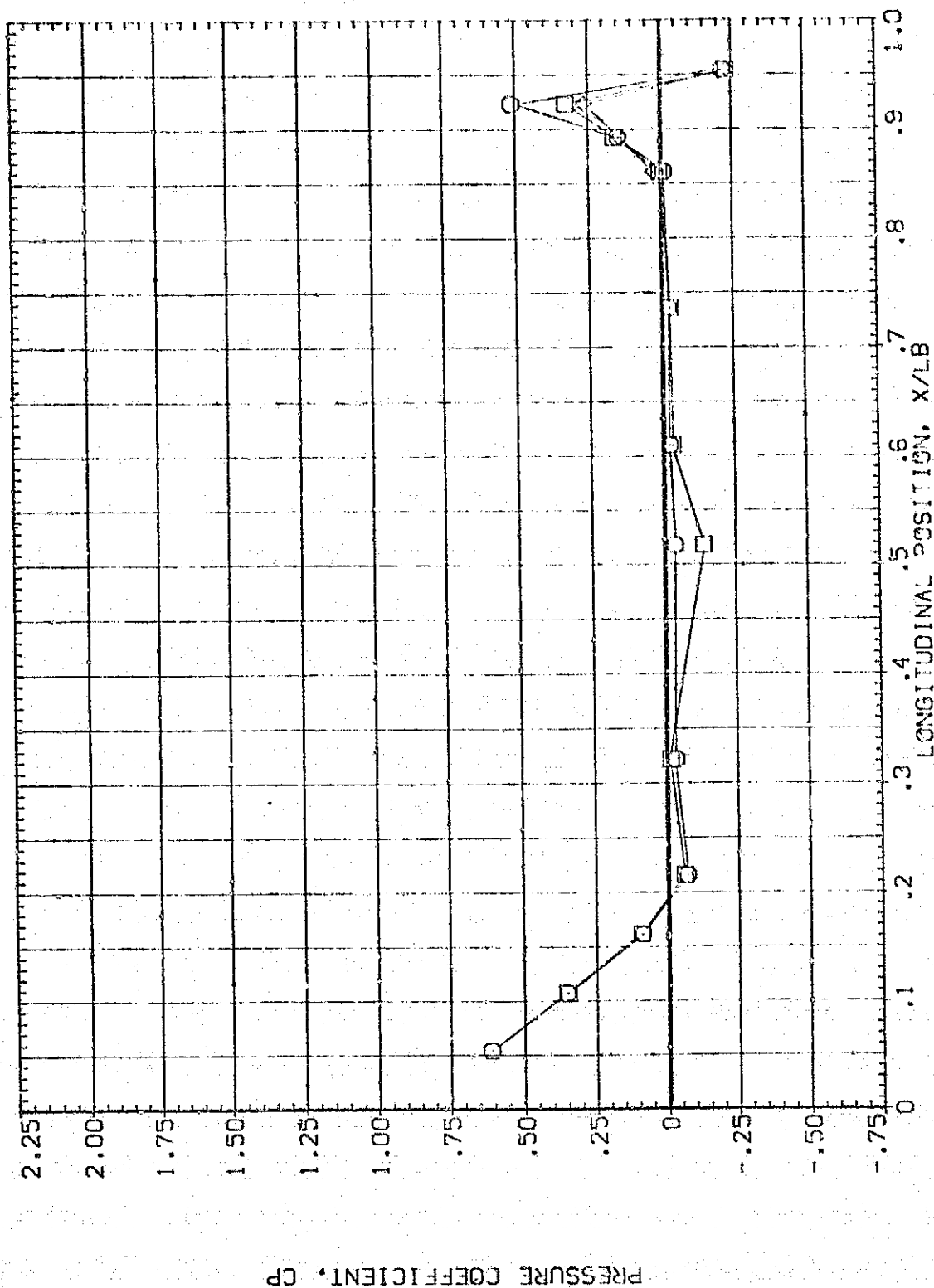


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	45.000	-4.330	1.960	MDUNT	.000 OFFSET
□	37.500			PH1	.000
◇	30.000				

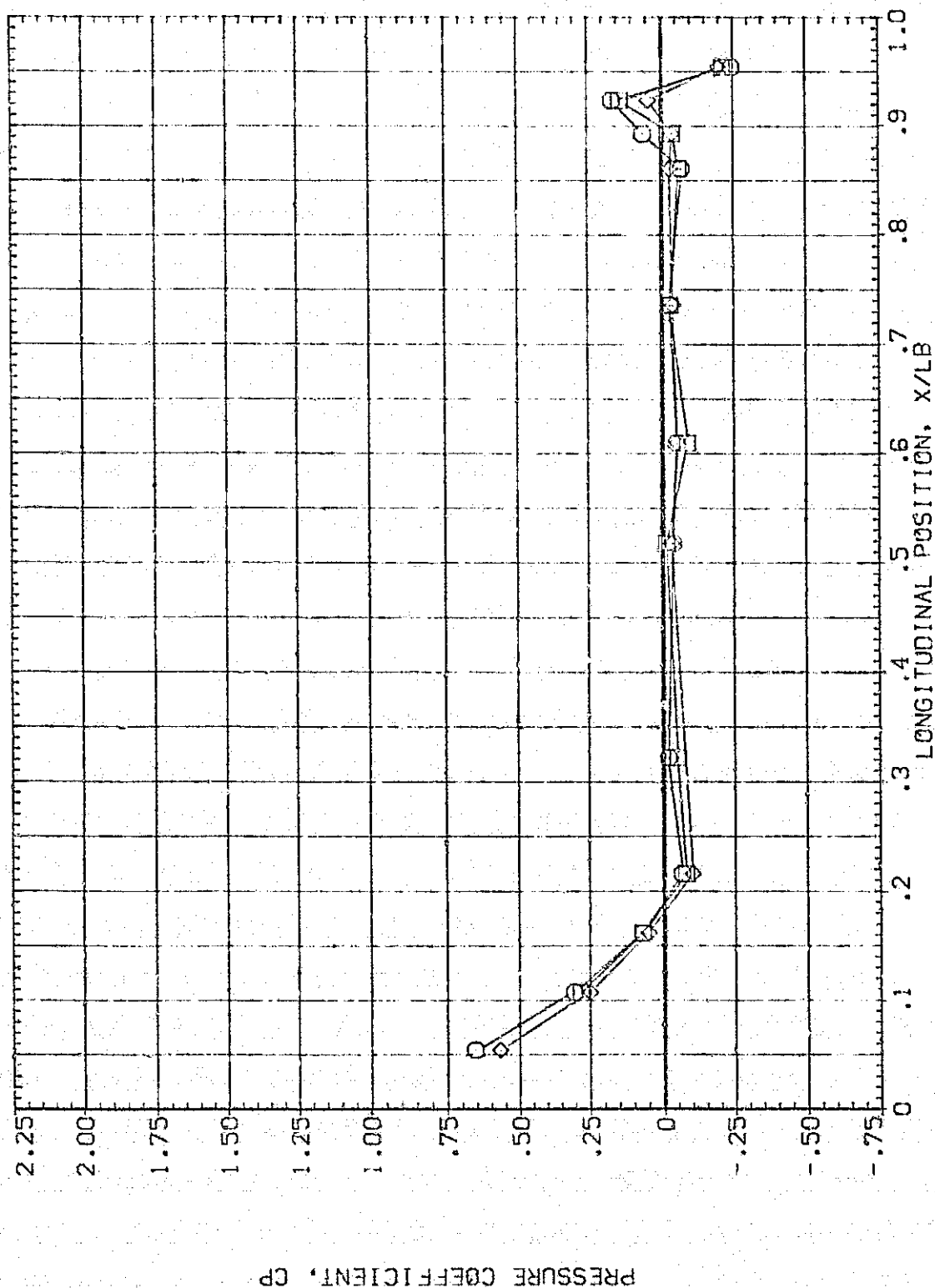


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA002)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	112.500	-4.330	1.960	.000	.000	.000
◇	135.000			1.000		
	157.500					

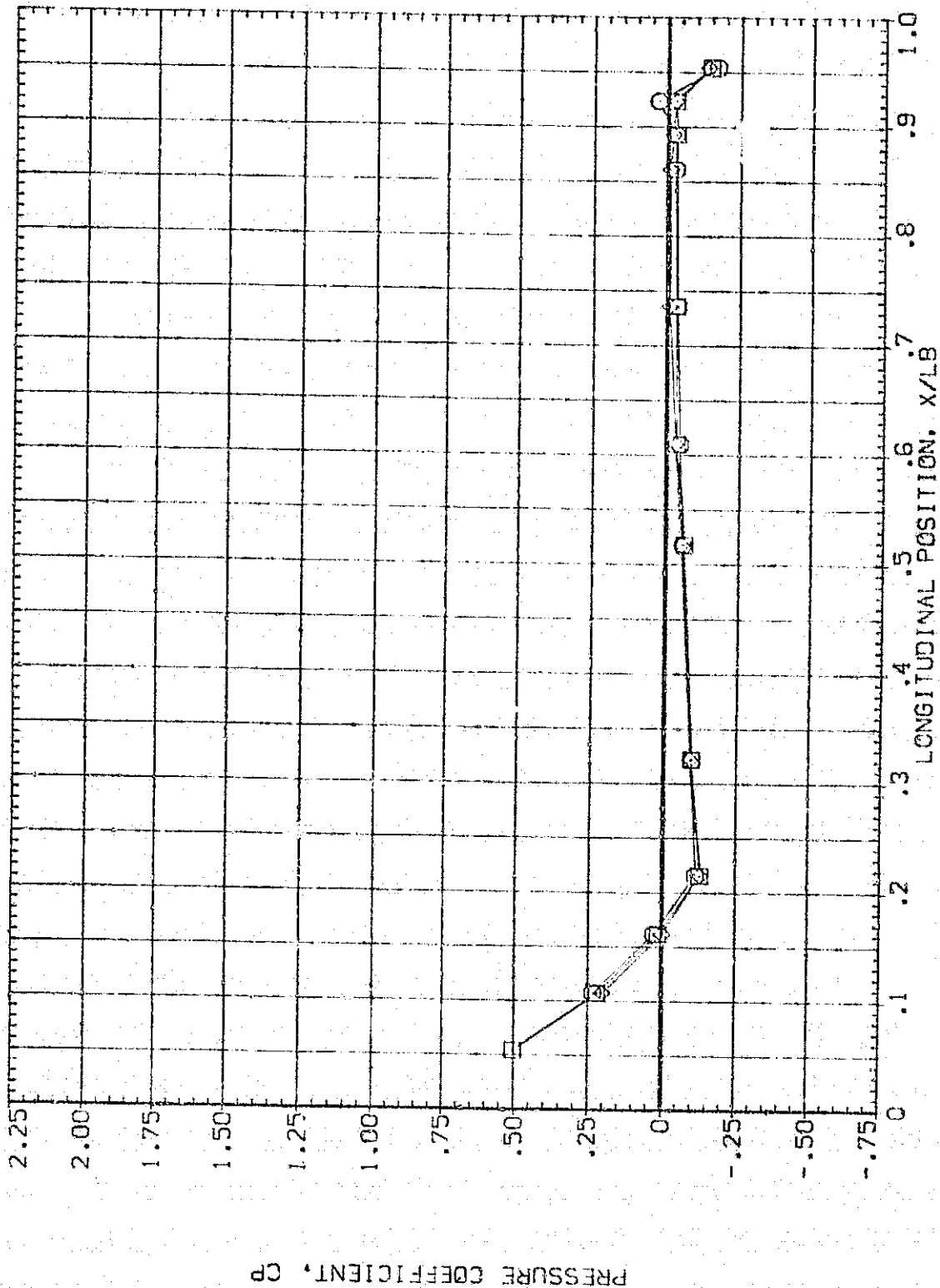


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	130.000	-4.330	1.960	MOJMT	.000 OFFSET .000
□	202.500				1.000 PHI .000
◇	225.000				

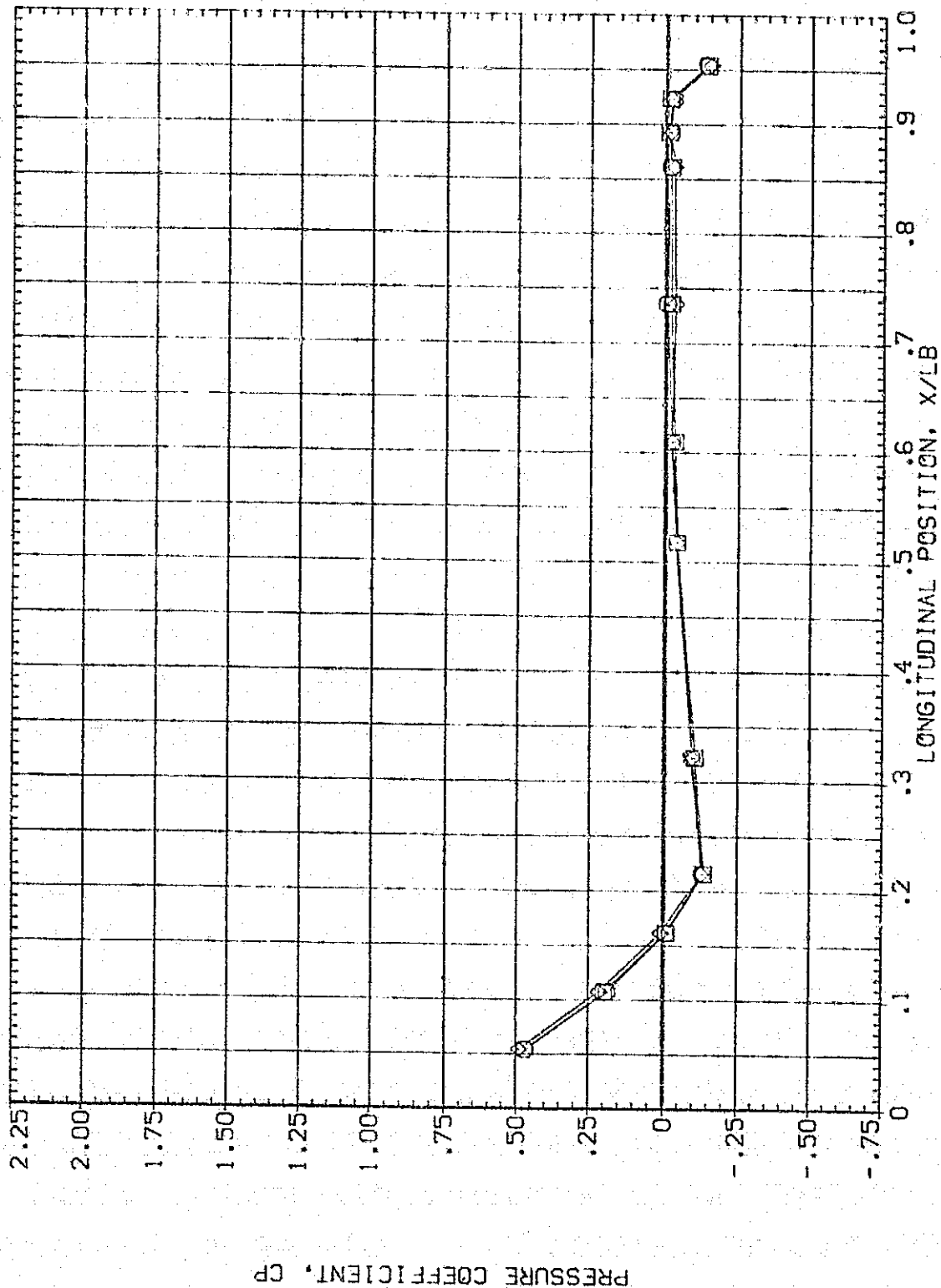


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (P1A002)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
C	217.500	-4.330	1.960	MOUNT	.000	.000
□	270.000				1.000	
◇	292.500					

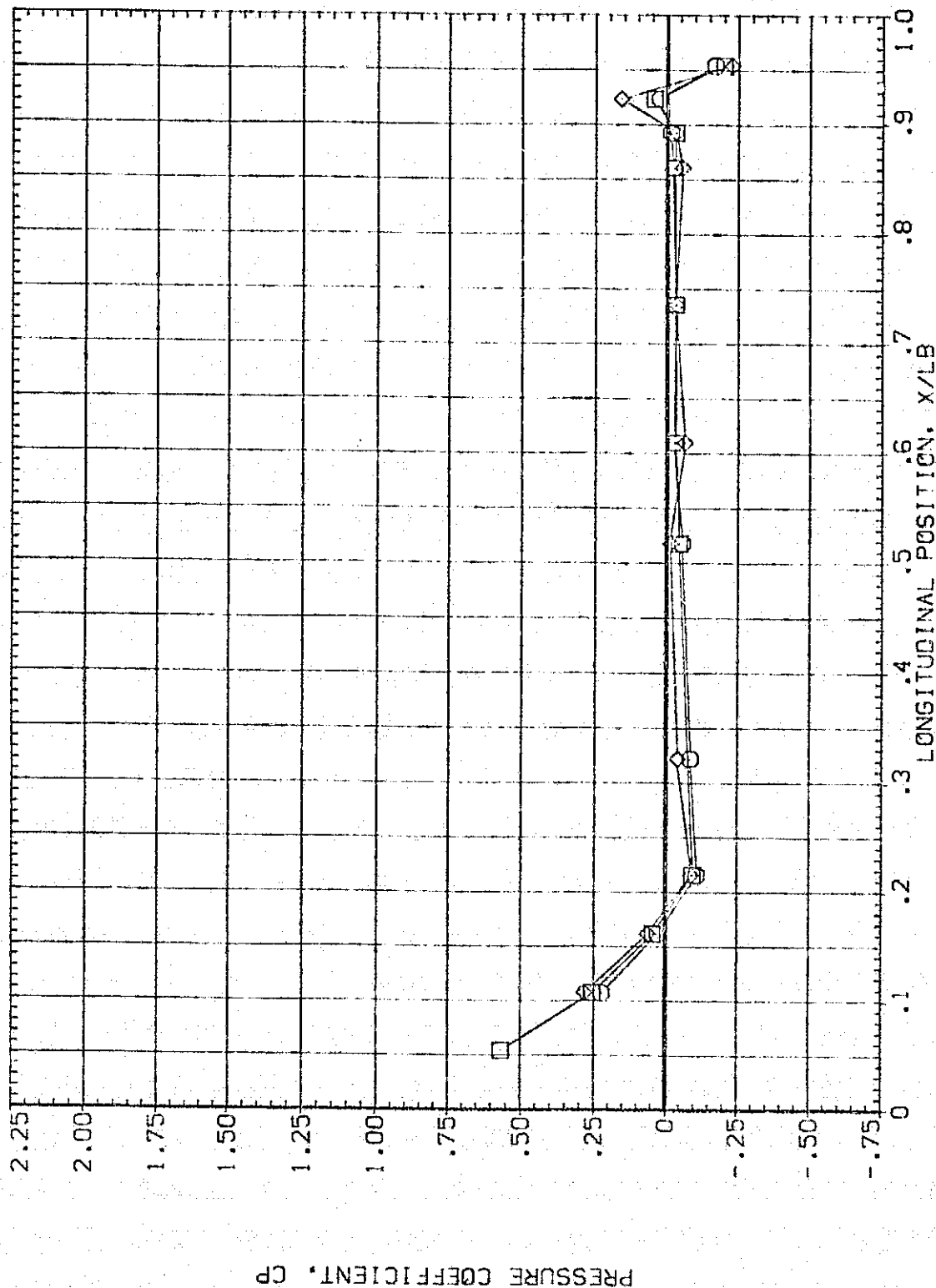


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	-4.330	1.960	MOUNT	.000 OFFSET
□	326.000				1.000 PHI
◇	346.000				.000

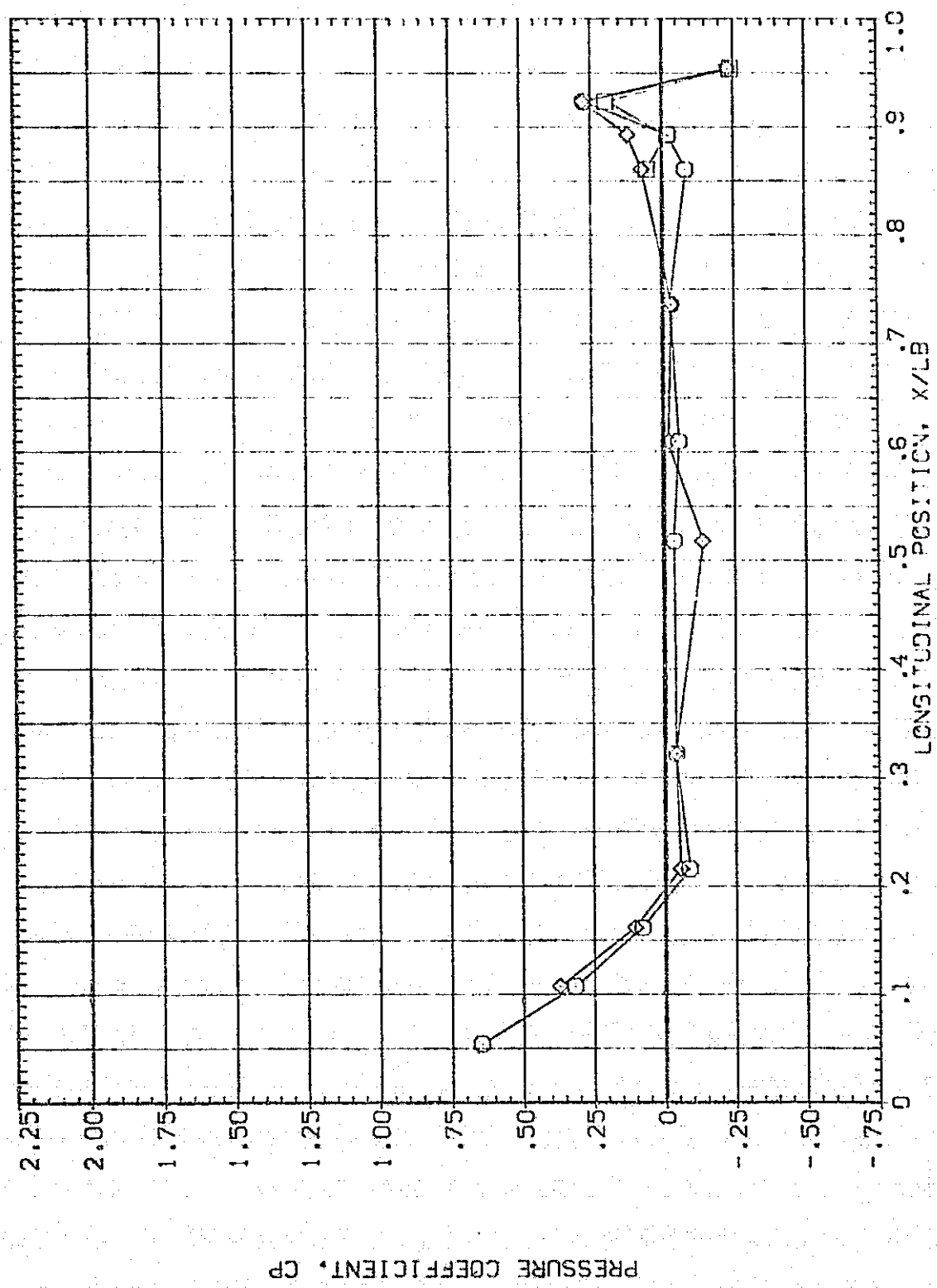


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 .000 .000 .000  
 BETA OFFSET PHI  
 MGUNT 1.000

SYMBOL THETA ALPHA MACH  
 .000 .280 1.960  
 14.000  
 24.000

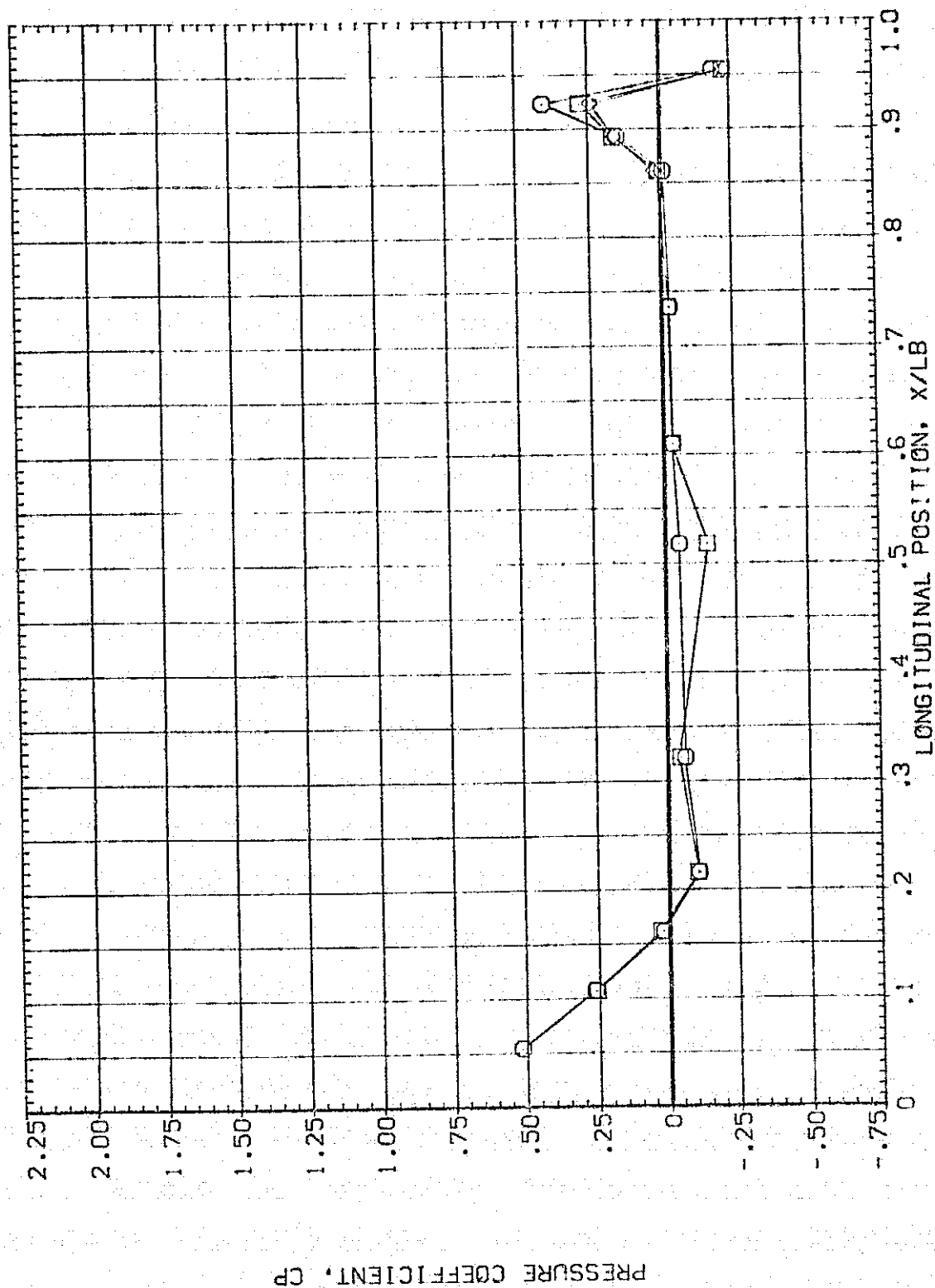


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

SYMBOL  
 ○ □ ◇

THETA 45.000  
 37.500  
 30.000

ALPHA -.280

MACH 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 .000  
 1.000 PH: .000

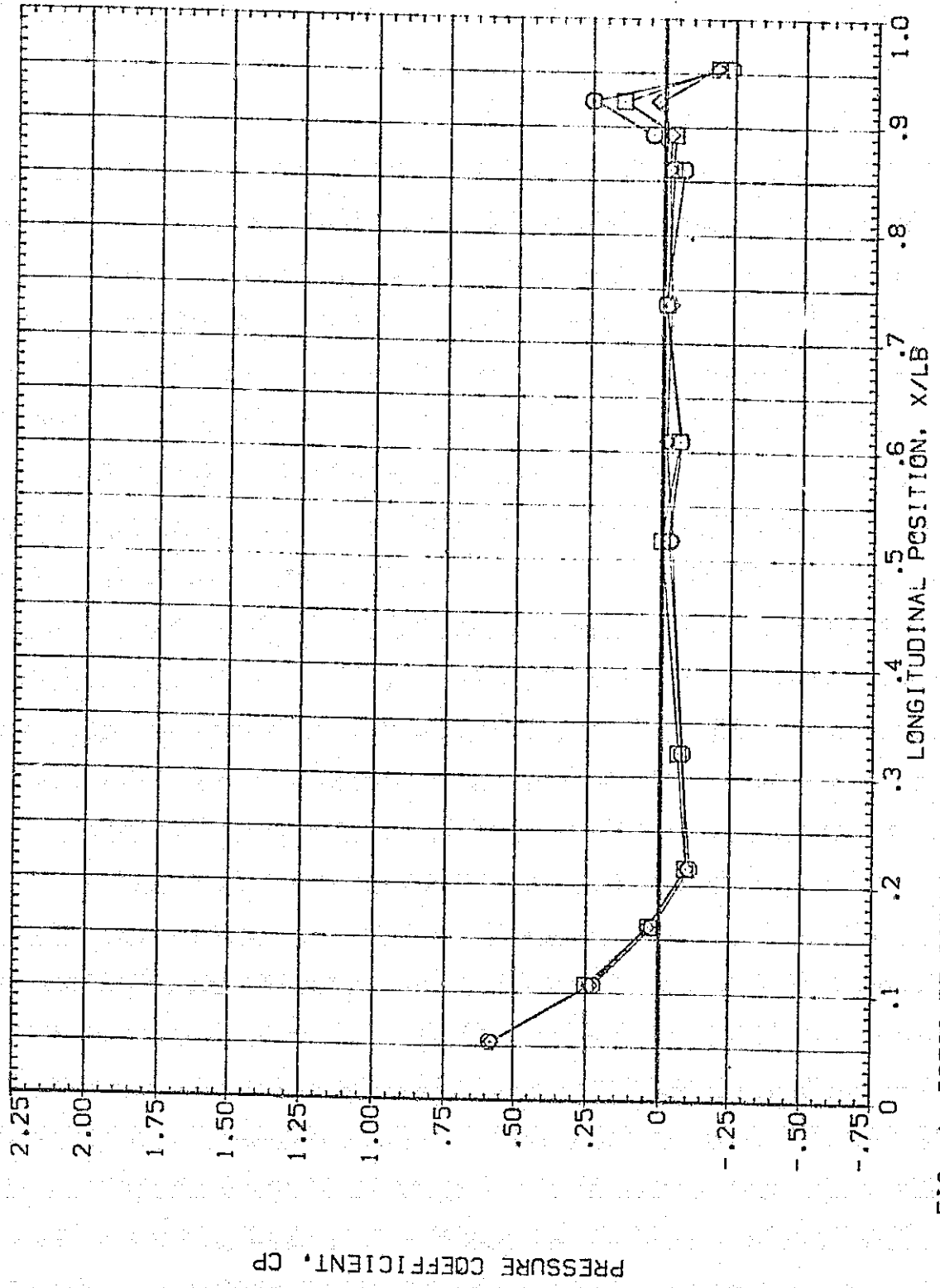


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A003)

SYMBOL    THETA    ALPHA    MACH  
 ○    112.500    -.280    1.960  
 □    135.000  
 ◇    157.500

PARAMETRIC VALUES  
 BETA    .000    OFFSET    .000  
 MOUNT    1.000    PHI    .000

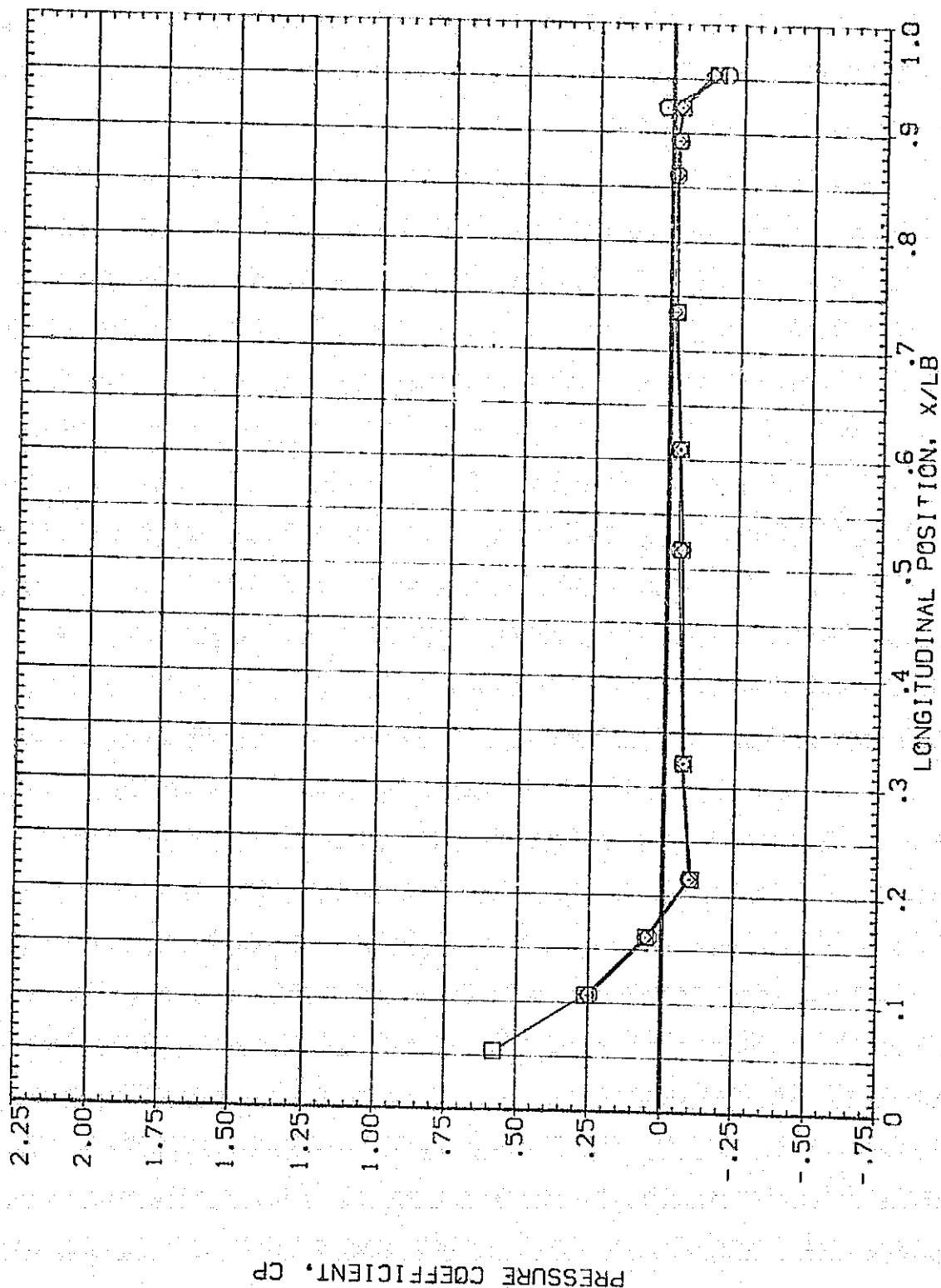


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL

THETA  
130.000  
272.500  
225.000

ALPHA  
-.280

MACH  
1.960

PARAMETRIC VALUES  
BETA  
MOUNT

.000  
1.000  
PHI  
.000

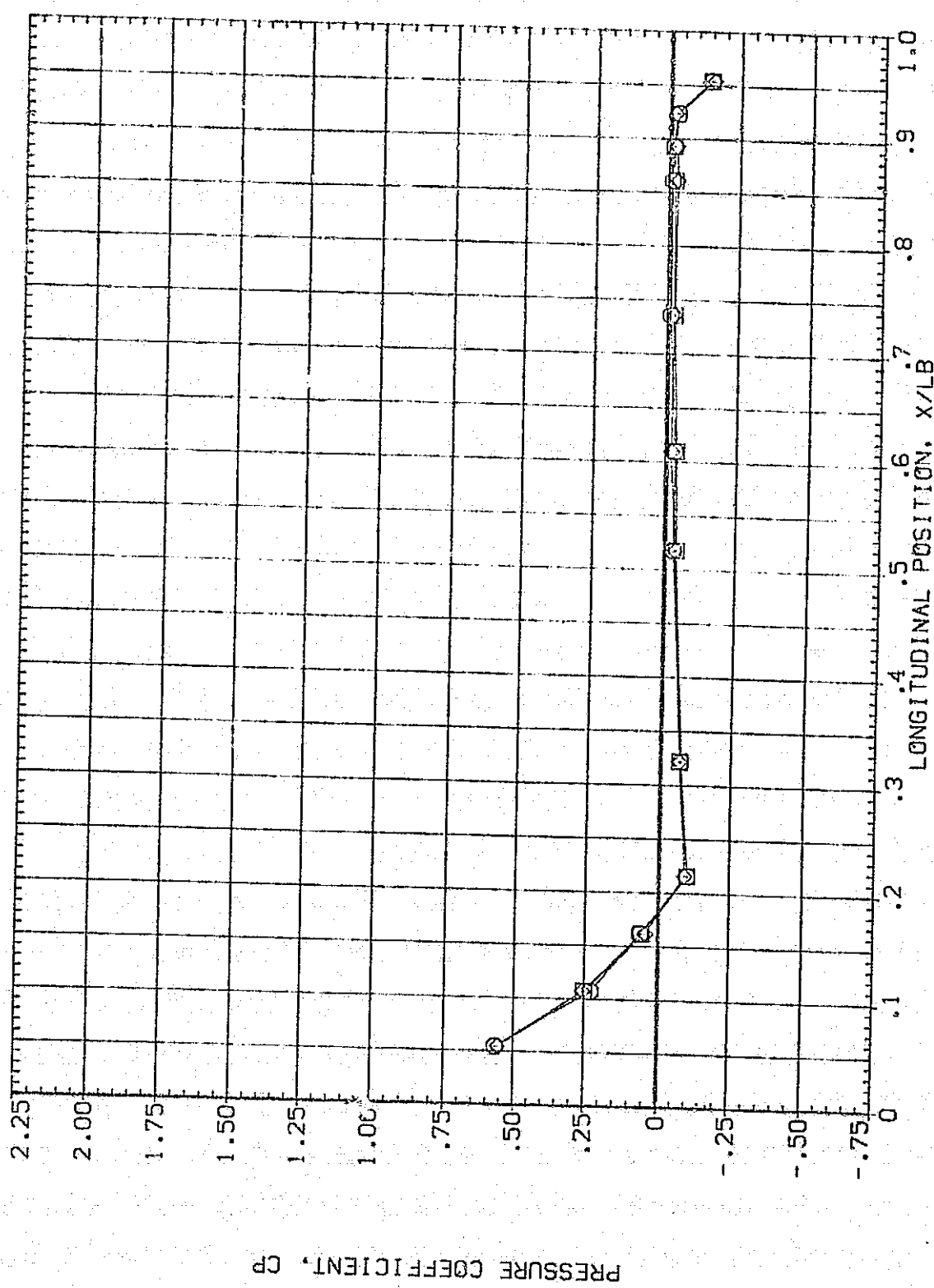


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A003)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	-.280	1.960	.000	.000	.000
□	270.000			1.000		
◇	292.500					

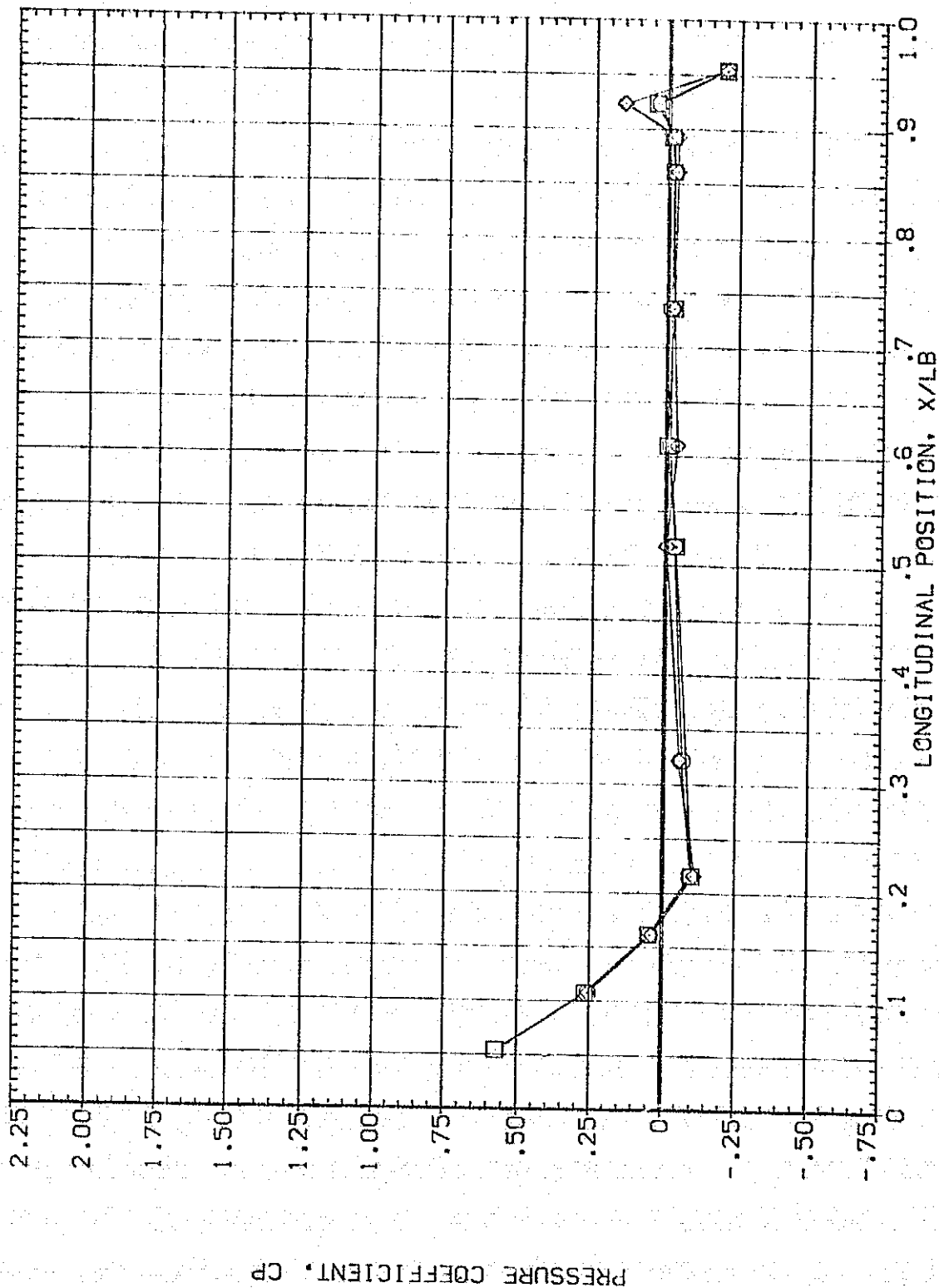


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI .000

SYMBOL THETA ALPHA MACH  
 315.000  
 325.000  
 345.000

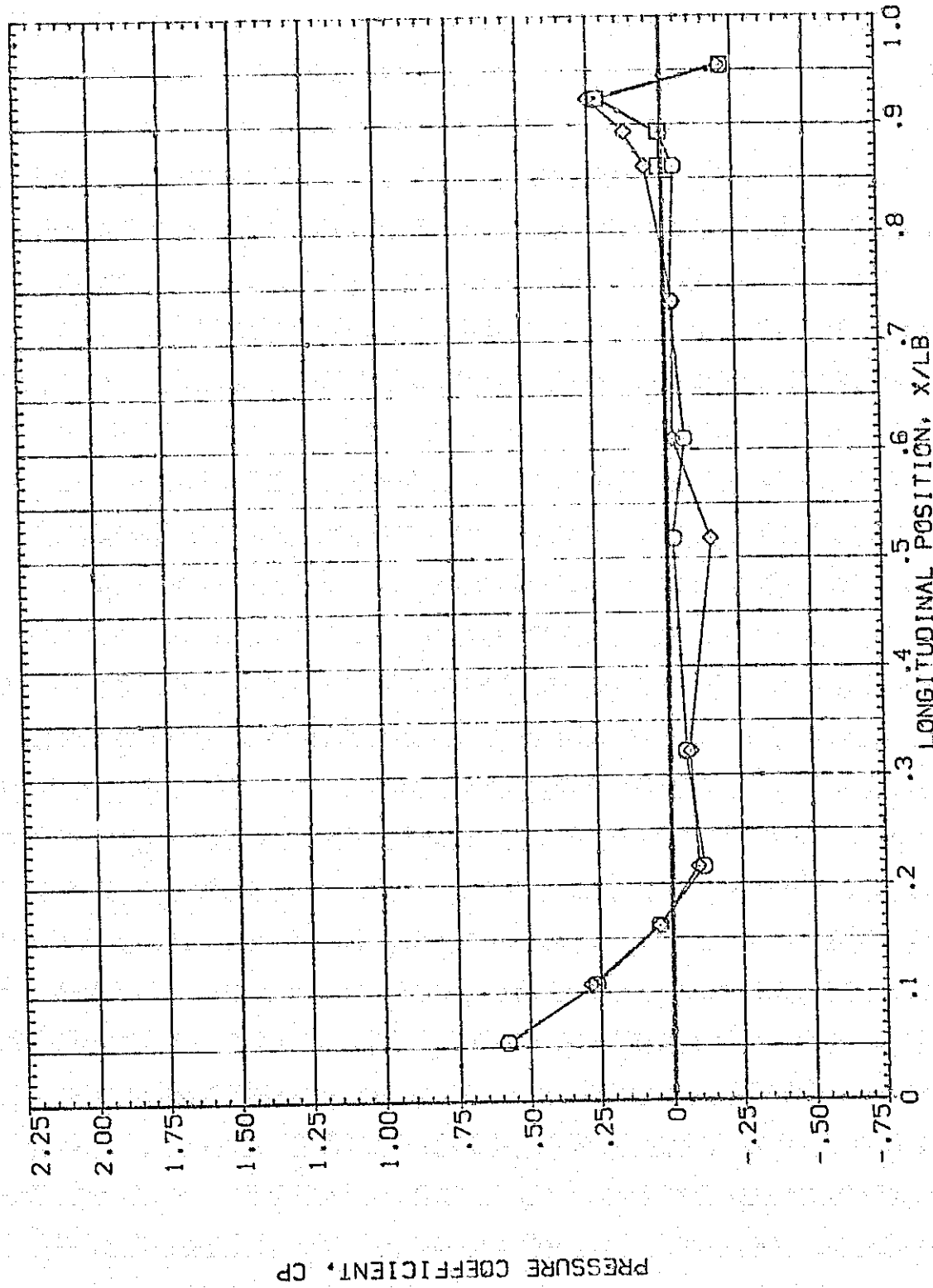


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA004)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 3.790

MACH  
 1.960

PARAMETRIC VALUES

BETA  
 .000  
 1.000  
 1.000

OFFSET  
 .000  
 .000

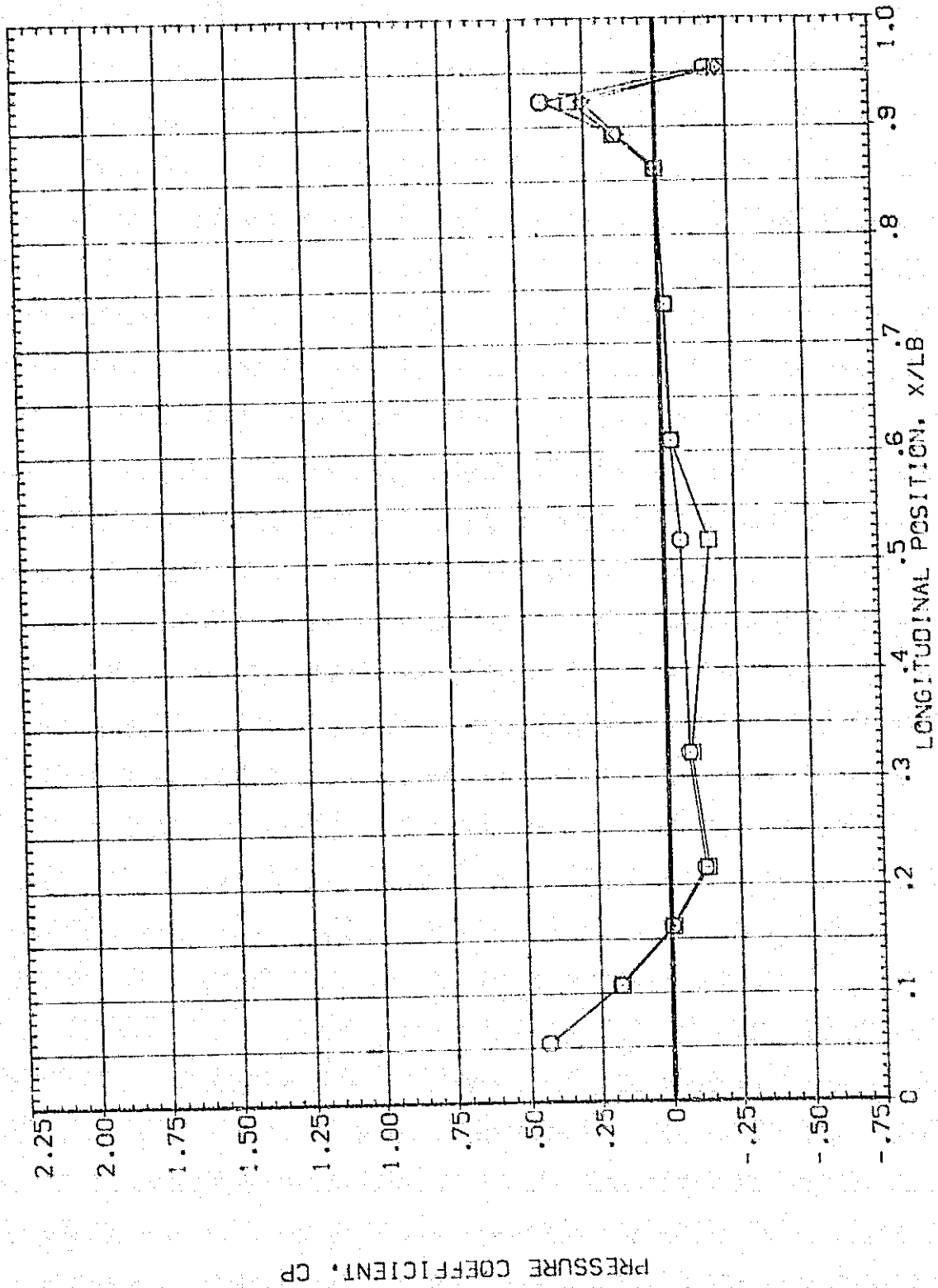


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	45.000	3.790	1.960	.000	OFFSET
□	57.500			1.000	PHI
◇	90.000			.000	

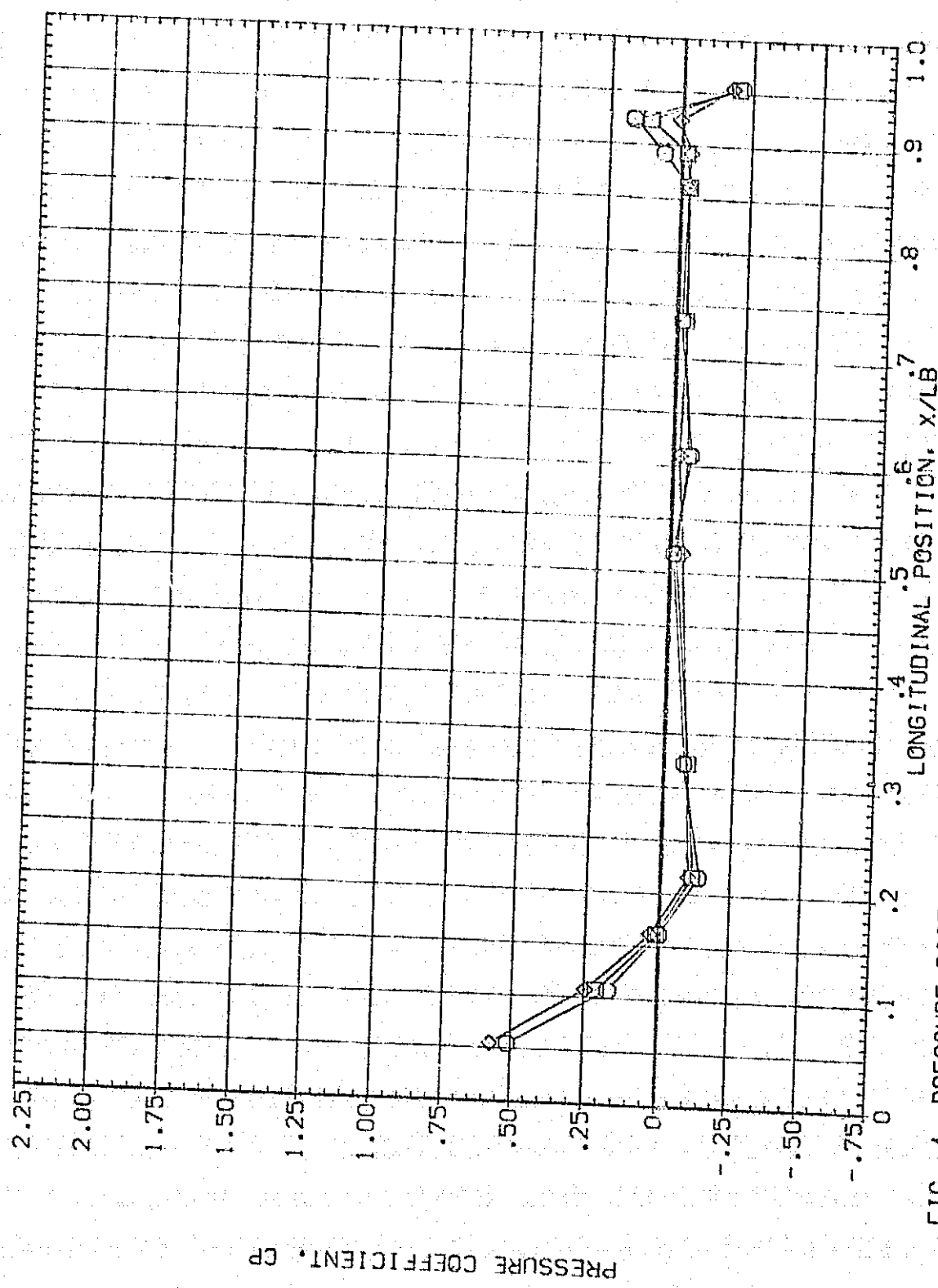


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A004)

SYMBOL

THETA ALPHA MACH  
 112.500 3.790 1.960  
 135.000  
 157.500

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 .000  
 1.000 PHI .000

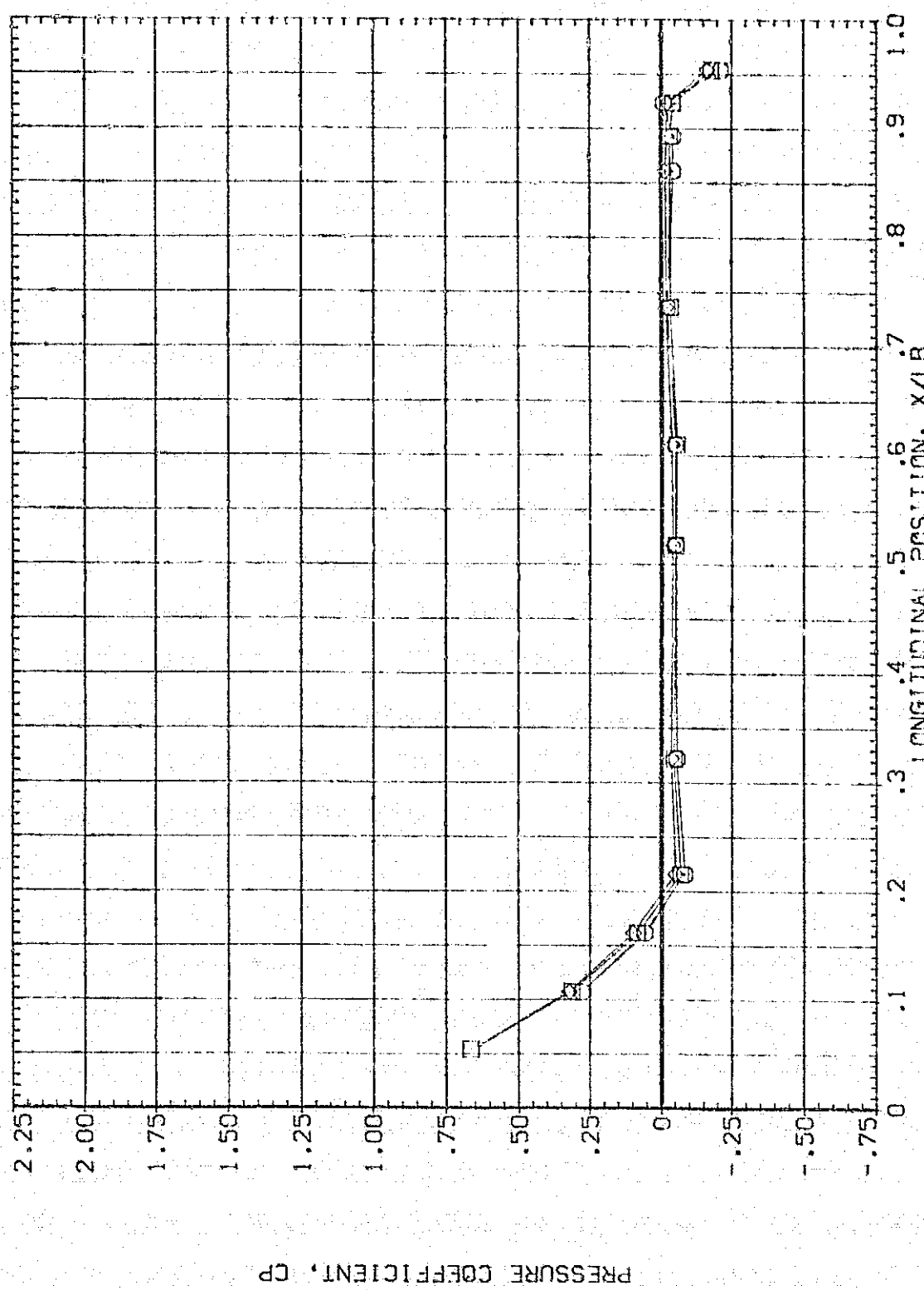


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	130.000	3.790	1.980	0.000	OFFSET
□	232.500			1.000	PHI
◇	225.000			0.000	

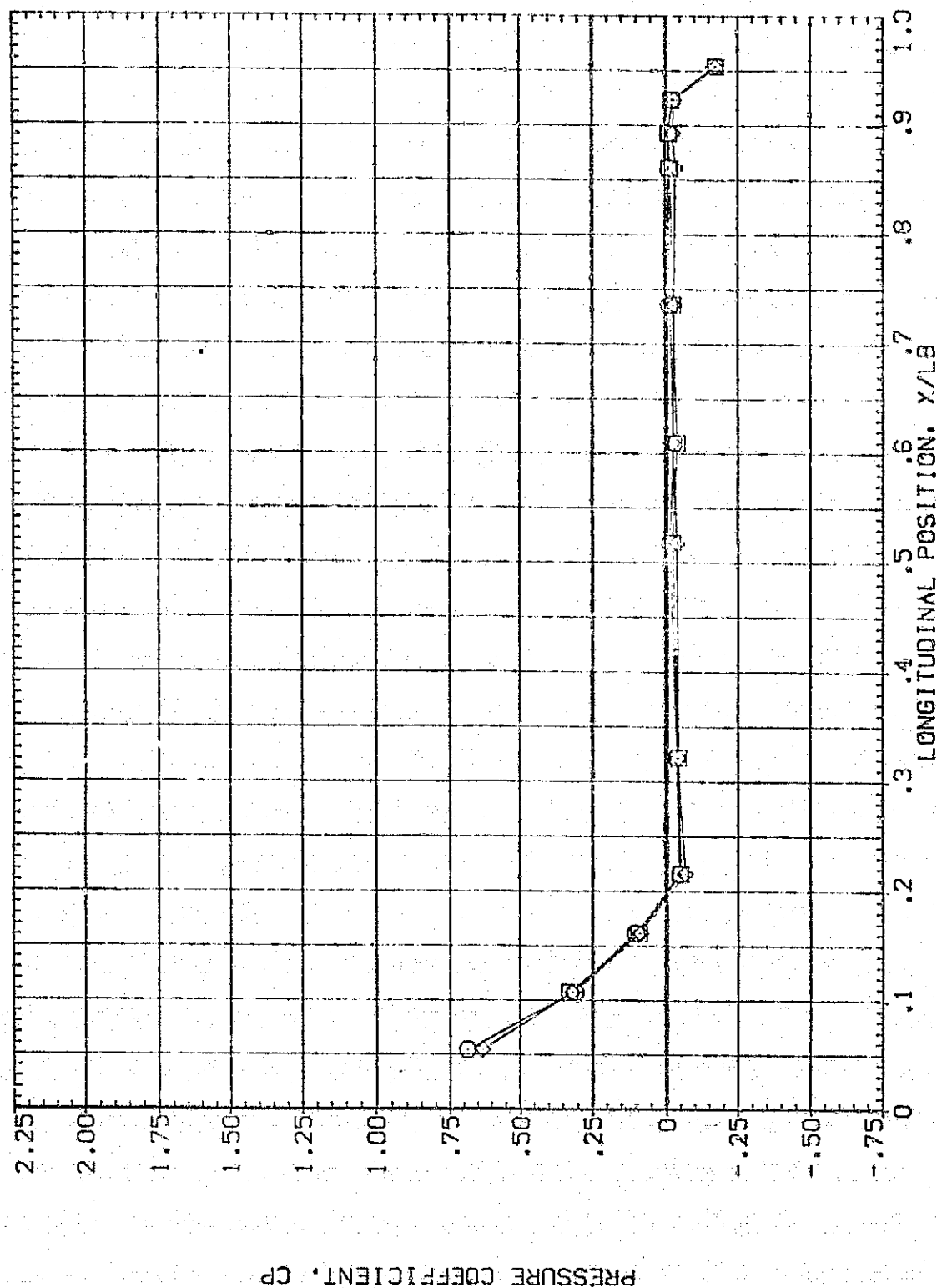


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA004)

SYMBOL THETA ALPHA MACH  
 247.500 3.790 1.960  
 270.000  
 292.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI .000

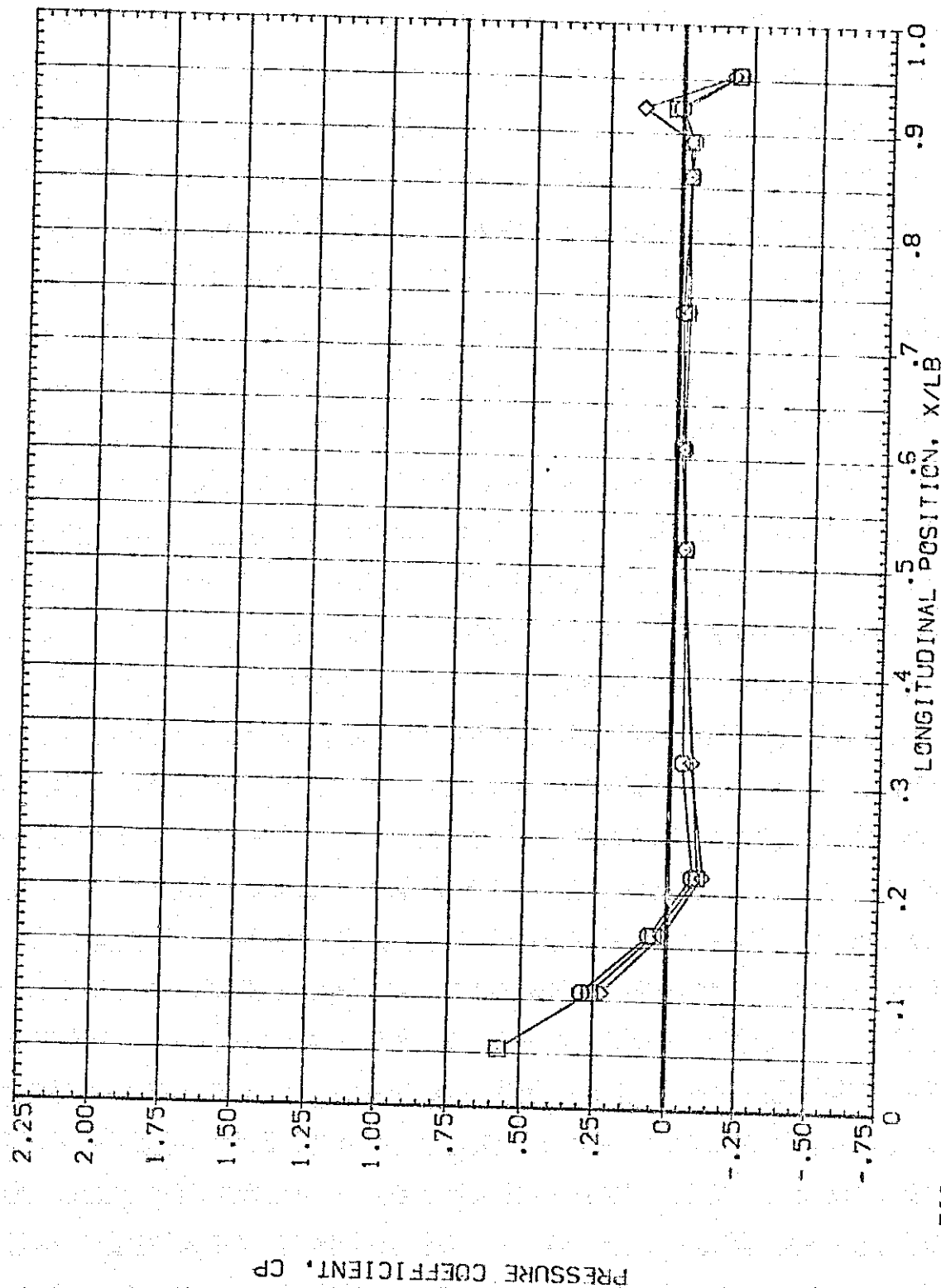


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL    THETA    ALPHA    MACH  
□    315.000    3.790    1.960  
◇    325.000  
◇    345.000

PARAMETRIC VALUES  
BETA    .000    OFFSET    .000  
MOUNT    1.000    PHI    .000

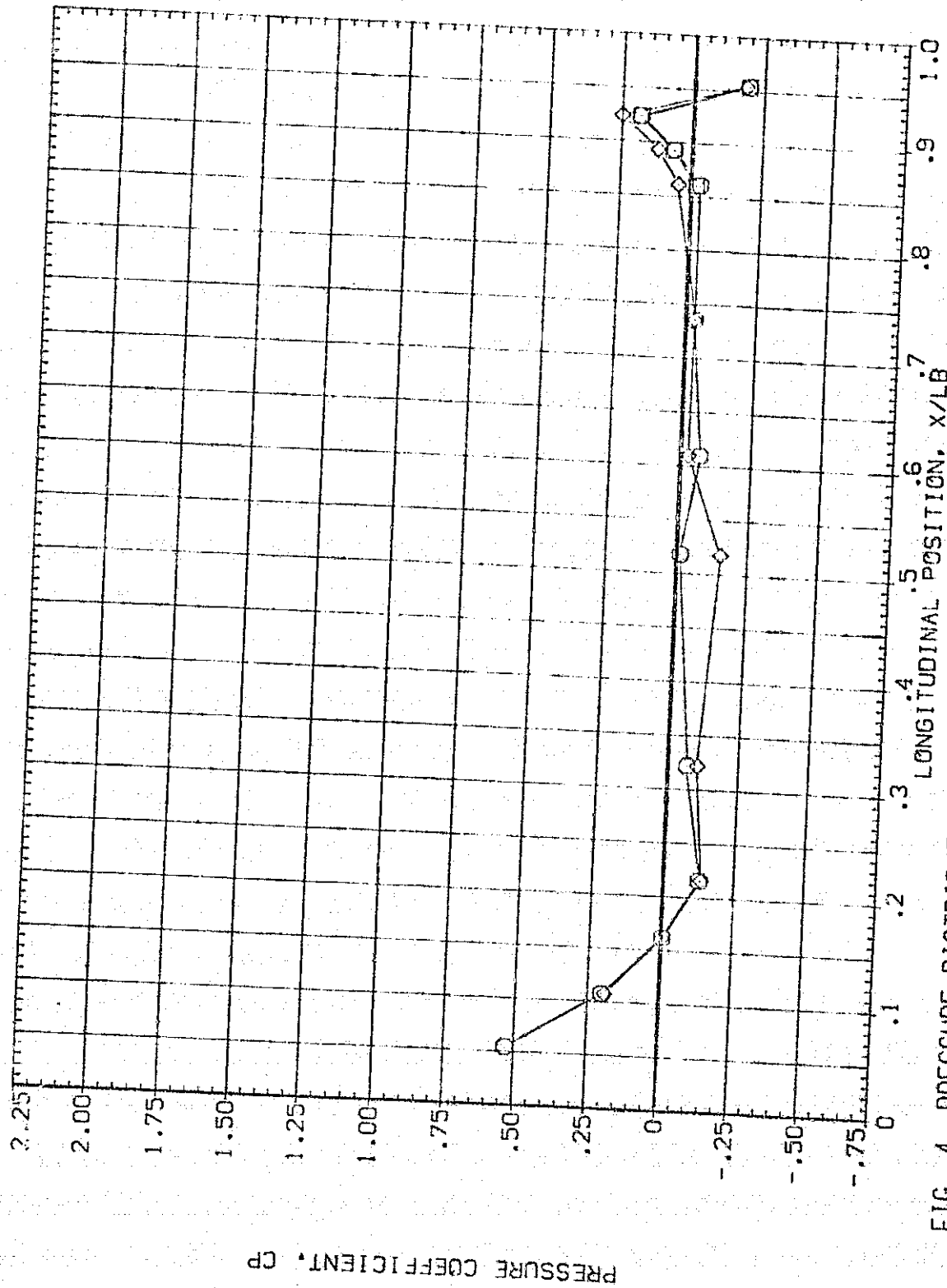


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA005)

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 PHI .000  
 OFFSET .500

SYMBOL THETA ALPHA MACH  
 ○ .000 7.860 1.960  
 □ 14.000  
 ◇ 24.000

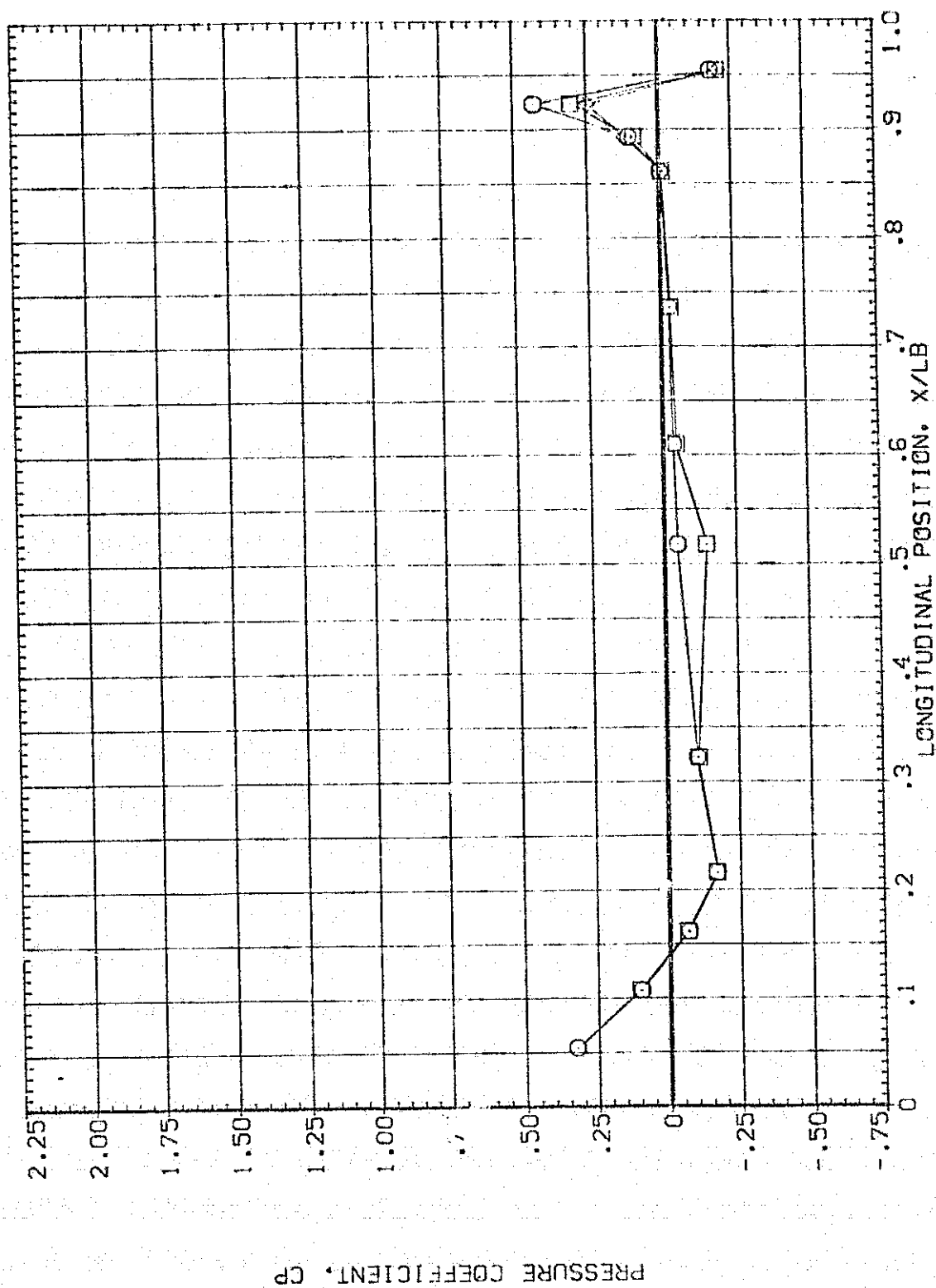


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL

THETA  
45.000  
57.500  
50.000

ALPHA  
7.860

MACH  
1.960

BETA  
MOUNT

PARAMETRIC VALUES  
.000 .000 .000  
1.000 OFFSET PHI

.000  
.000

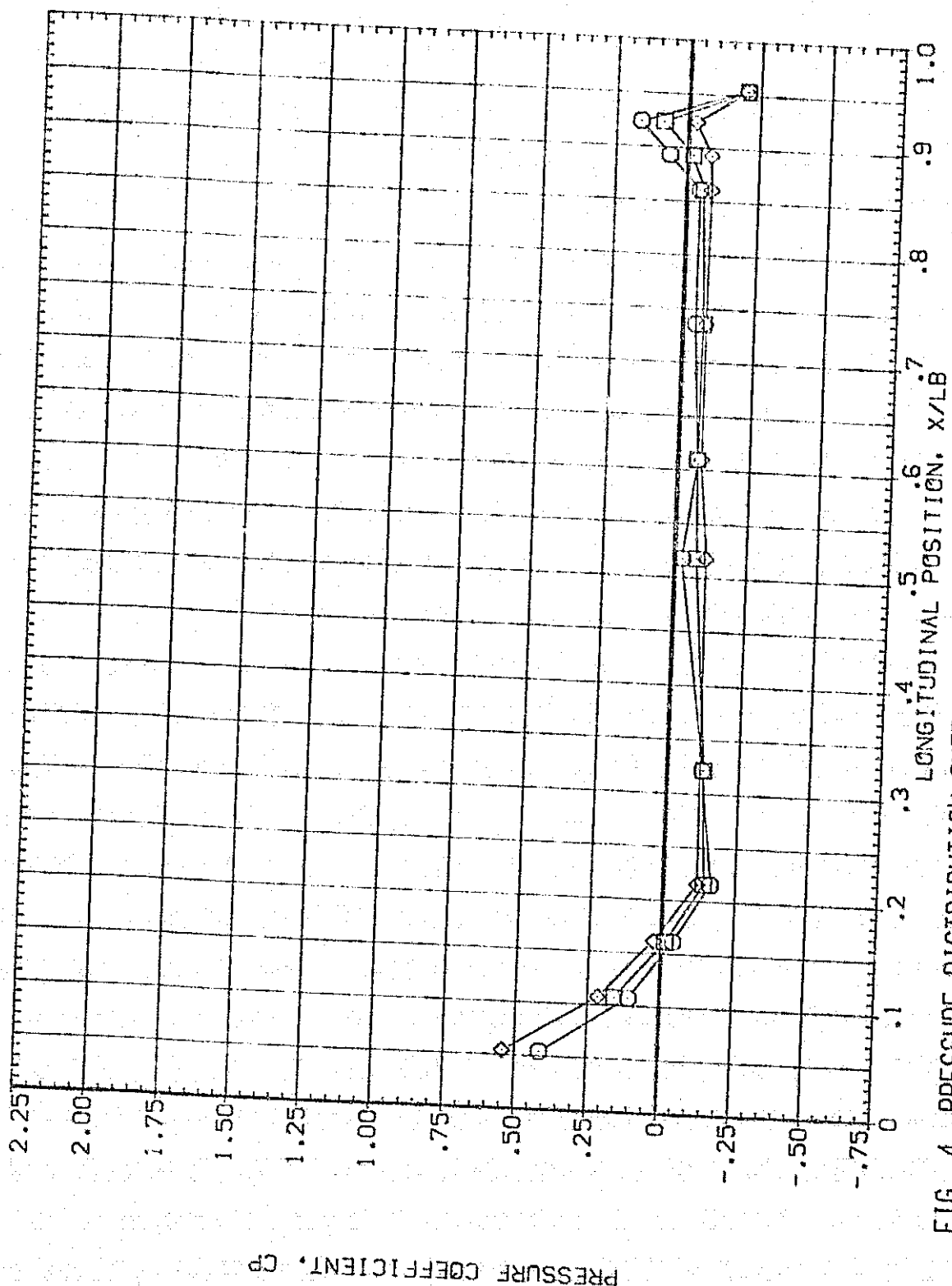


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA005)

PARAMETRIC VALUES  
 .000 .000 .000  
 .000 .000 .000  
 1.000 1.000 1.000  
 BETA OFFSET PHI  
 MOUNT

SYMBOL  
 112.500  
 135.000  
 157.500  
 HETA  
 ALPHA 7.860  
 MACH 1.360

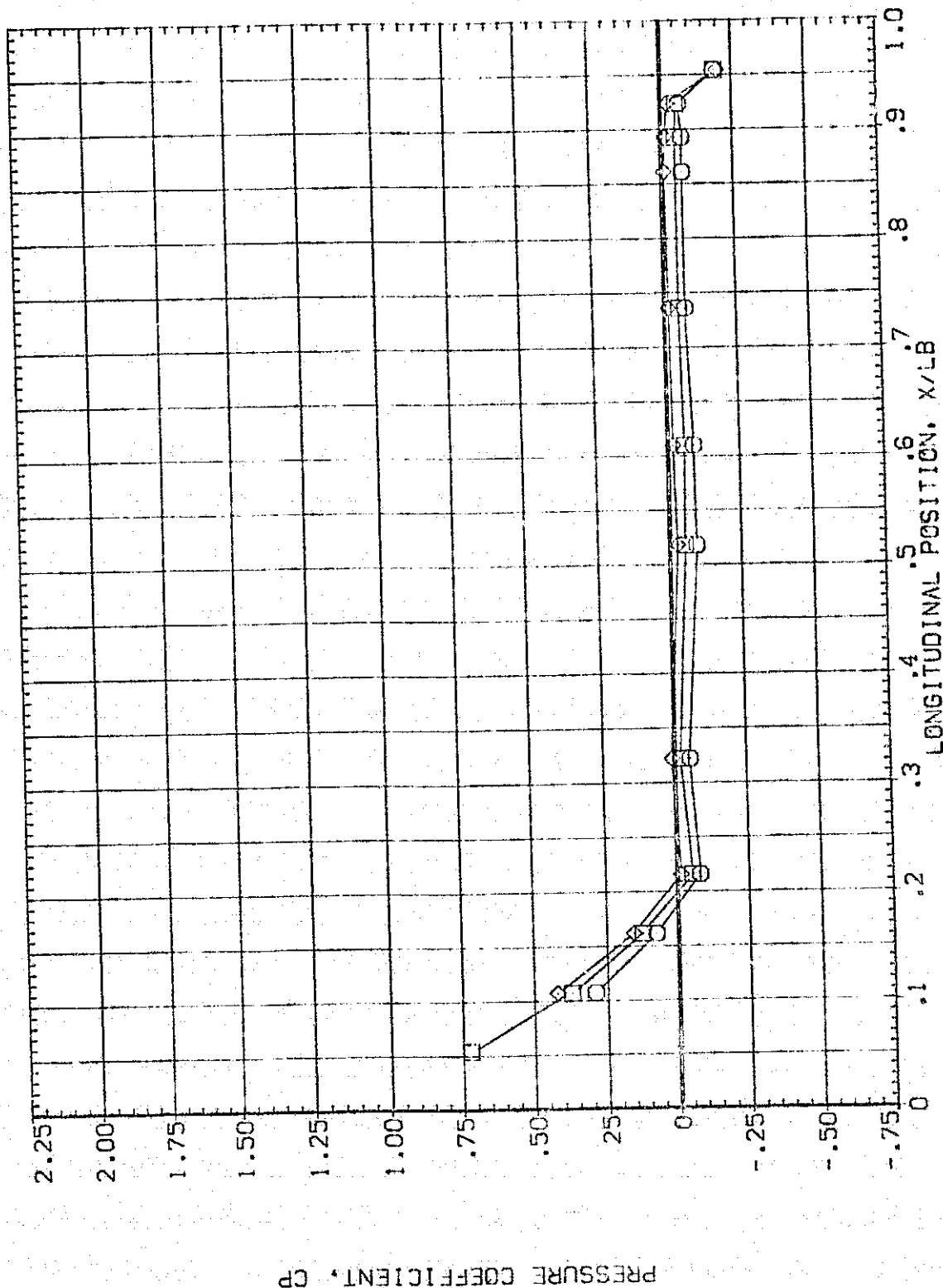


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

PARAMETRIC VALUES  
 BETA .000 OFFSET .000  
 MOUNT 1.000 PH1 .000

SYMBOL THETA ALPHA MACH  
 190.000 7.860 1.960  
 232.500  
 225.000

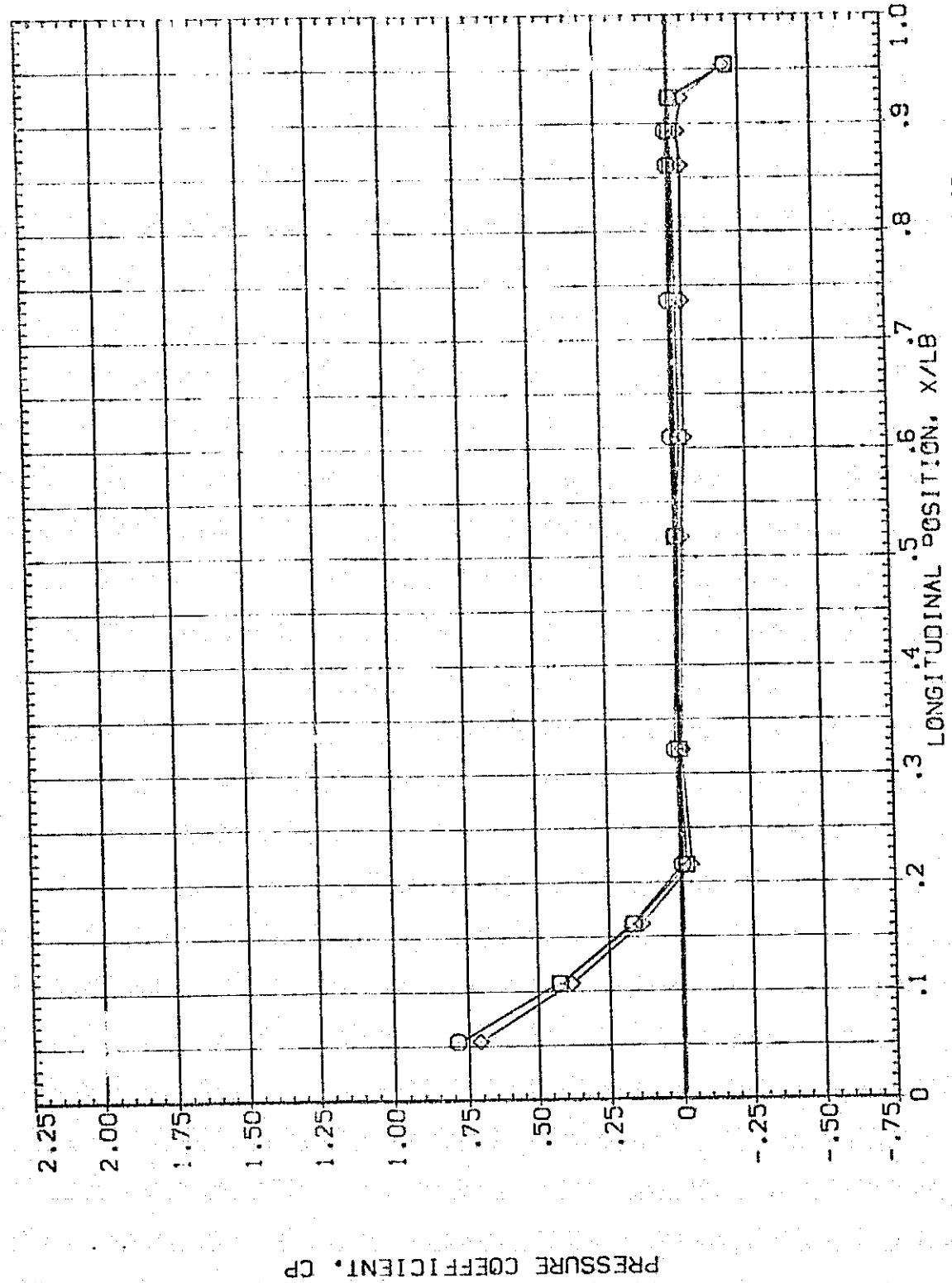


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A005)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 247.500  
 270.000  
 232.500

ALPHA  
 7.860

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 OFFSET  
 PHI

.000  
 .000

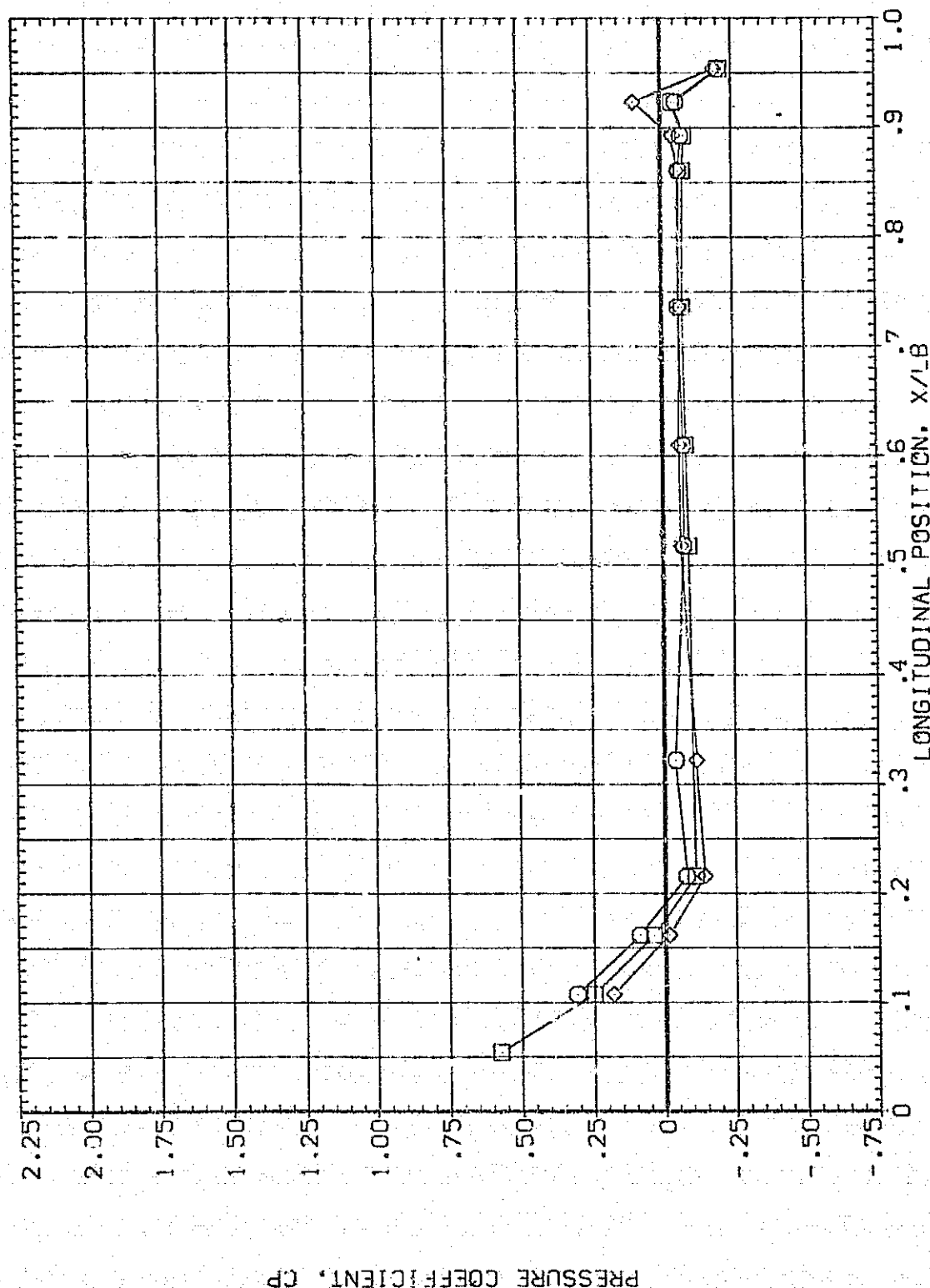


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	7.860	1.960	.000	OFFSET
□	326.000			1.000	PHI
◇	346.000			.000	

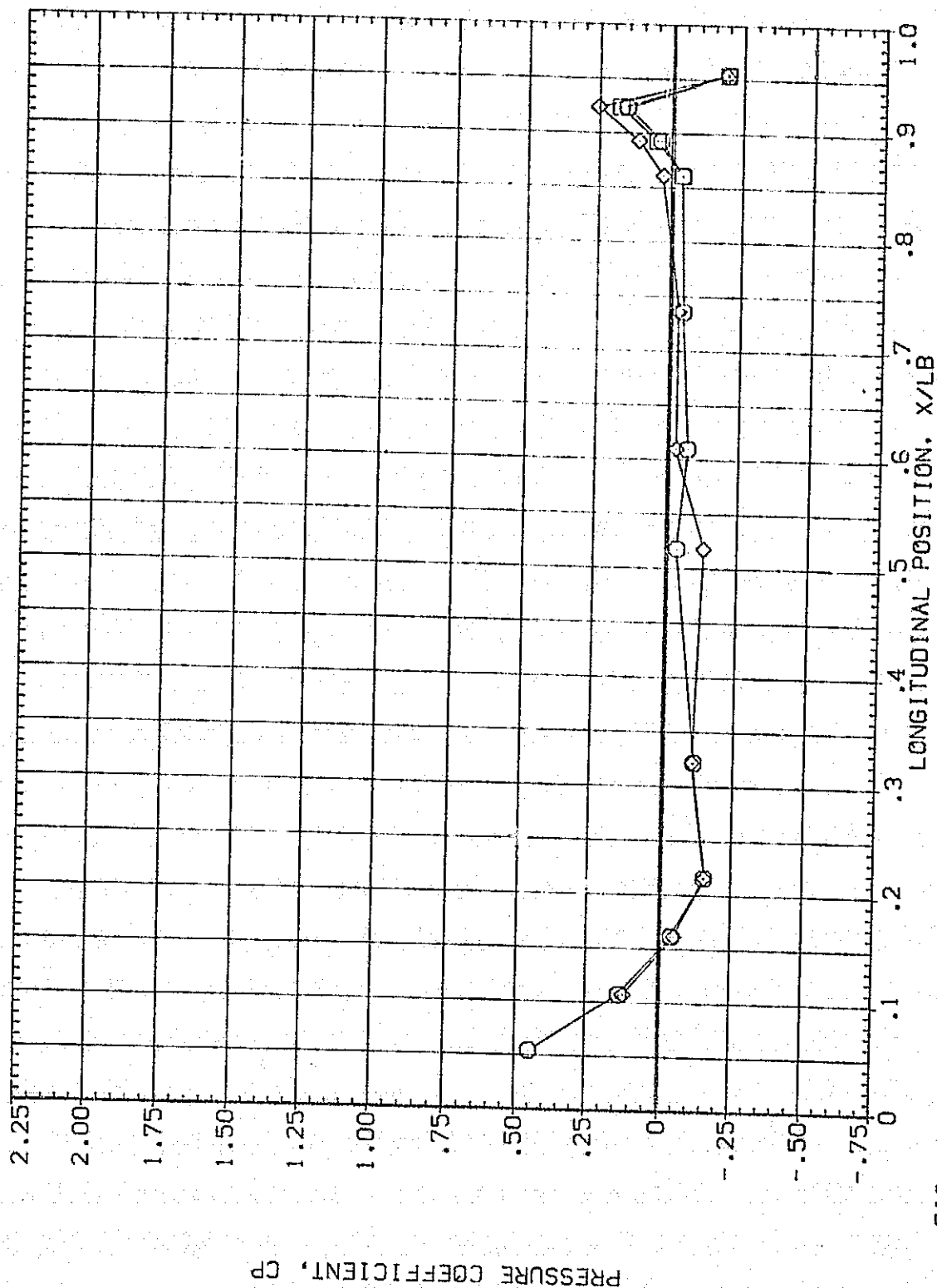


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A006)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	.000	14.000	24.000	12.570	1.970		BETA	.000	OFFSET	20.000
○							MCUNT	1.000	PHI	.000

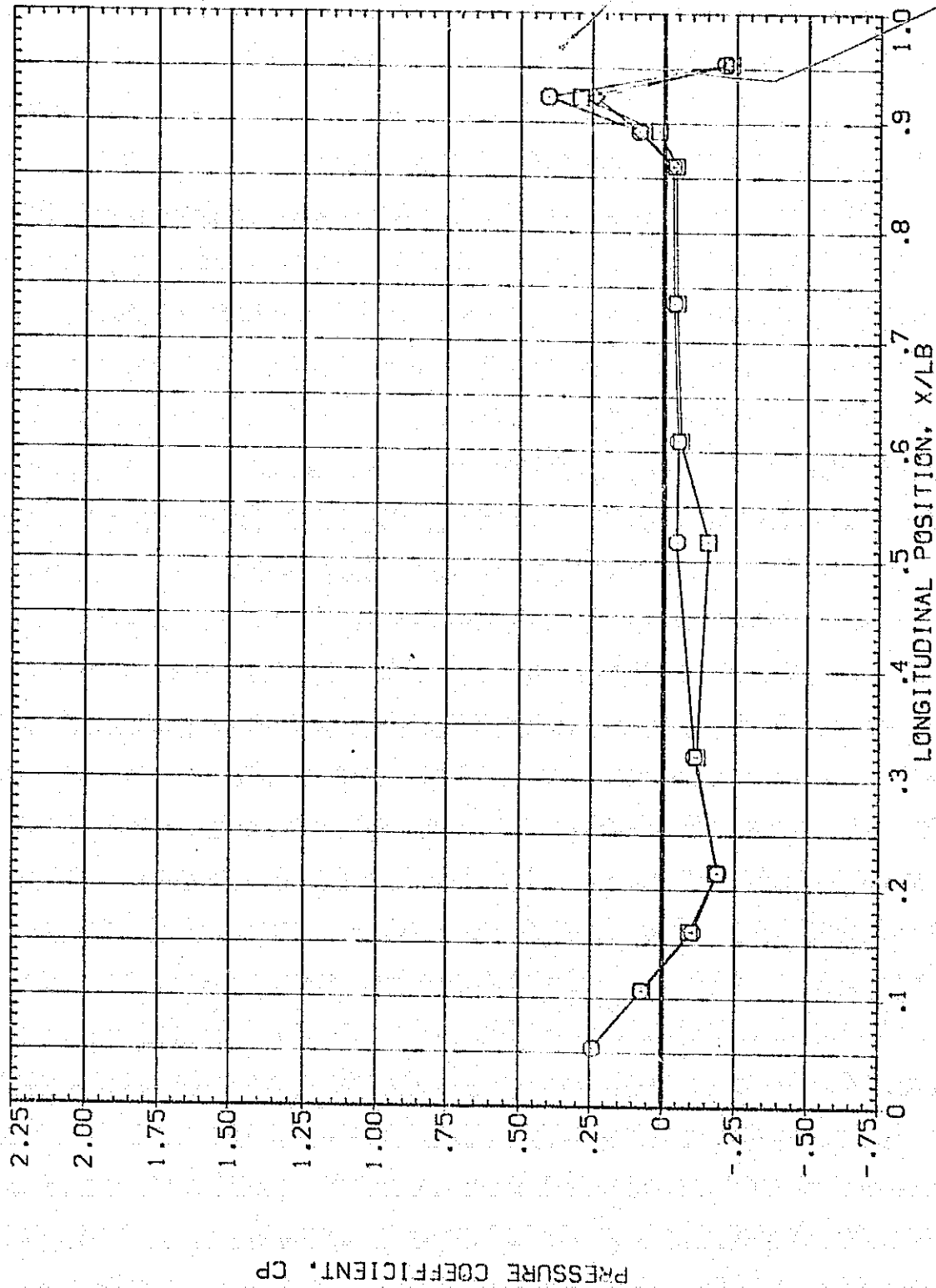


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 37.500  
 30.000

ALPHA  
 12.570

MACH  
 1.970

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 OFFSET  
 1.000 PHI

20.000  
 .000

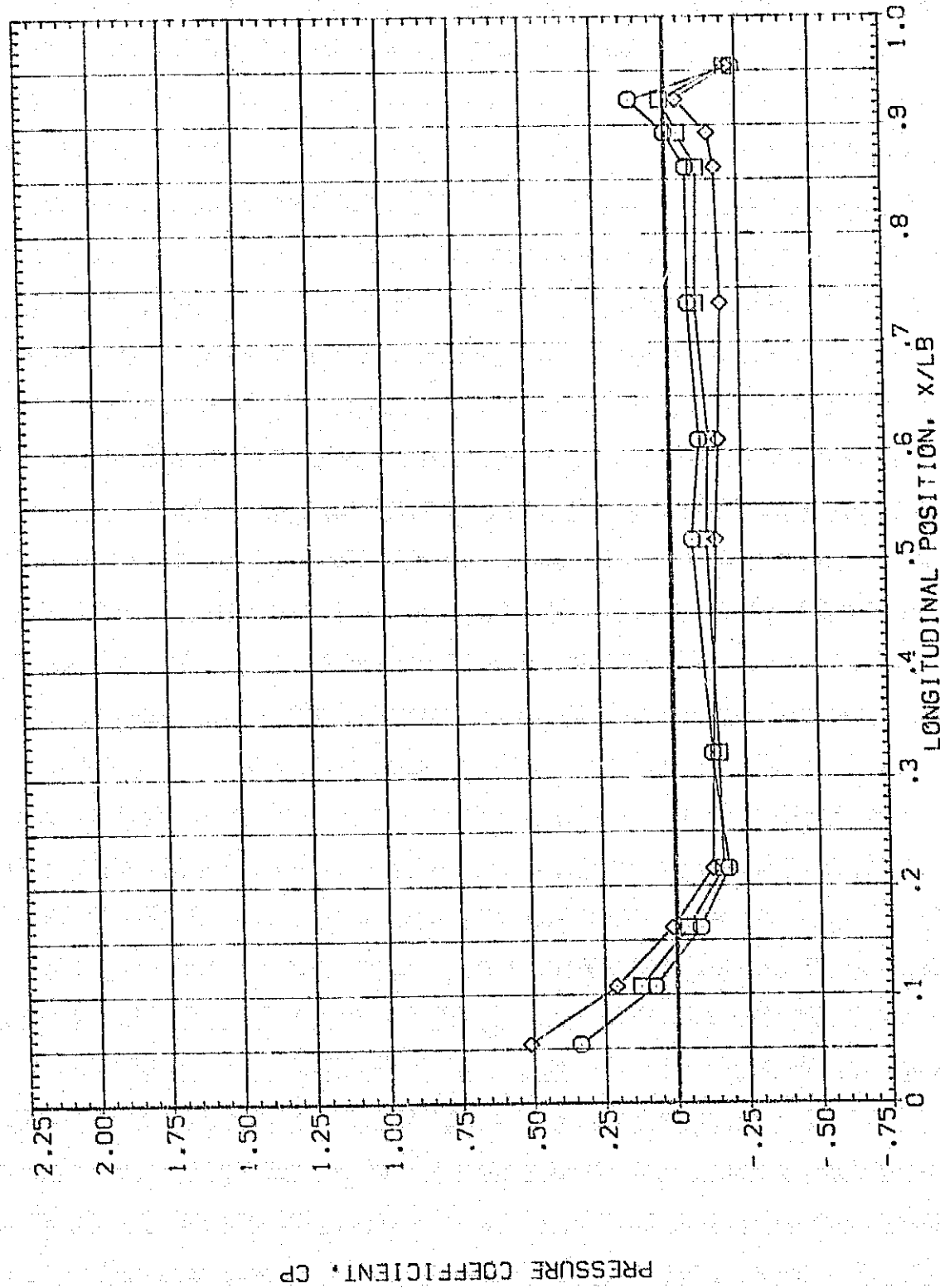


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A006)

SYMBOL

THETA ALPHA MACH  
 112.500 12.570 1.970  
 135.000  
 157.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 .000

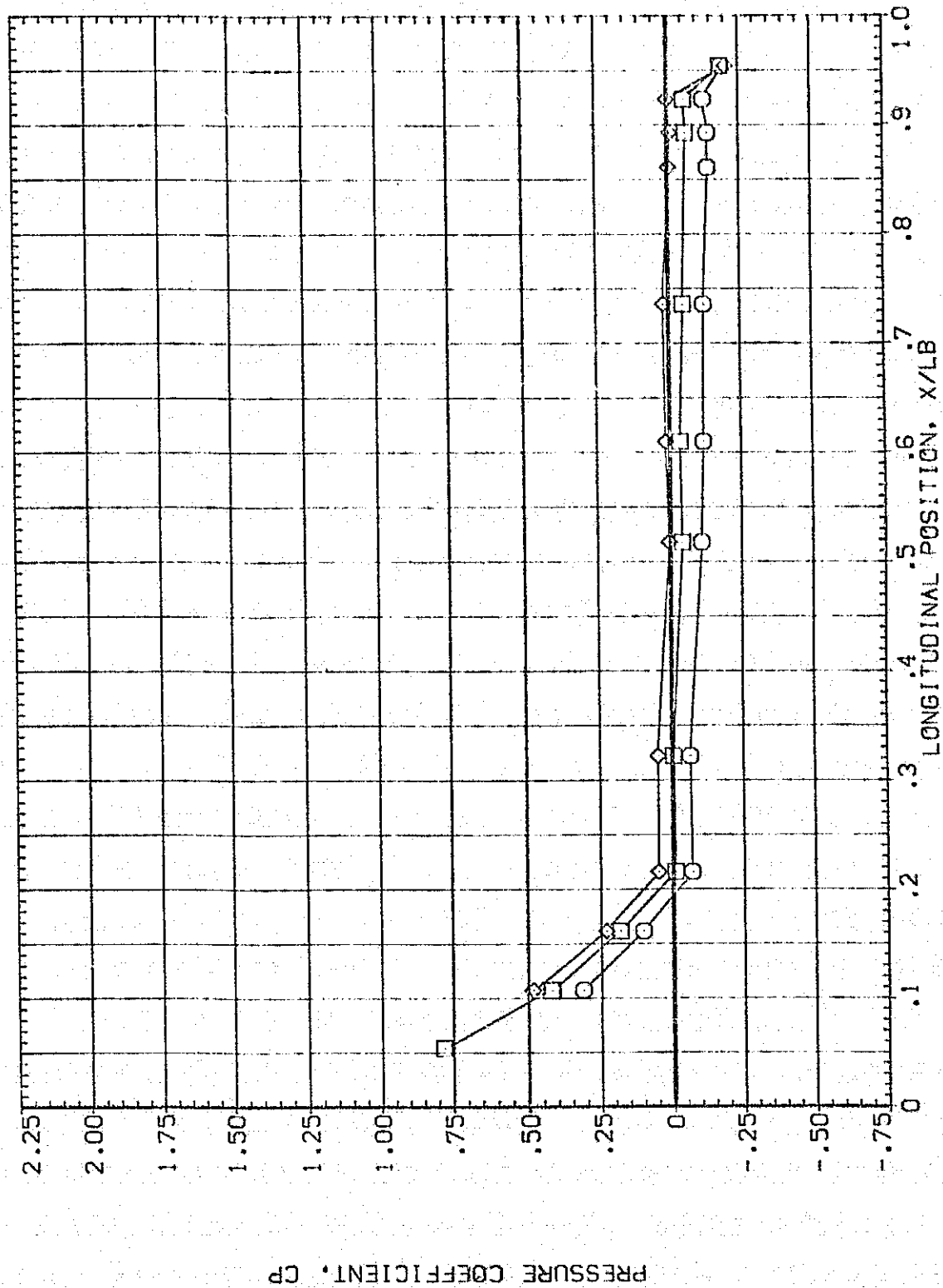


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	130.000	12.570	1.970	MOUNT	.000 OFFSET
□	202.500				1.000 PHI
◇	225.000				20.000

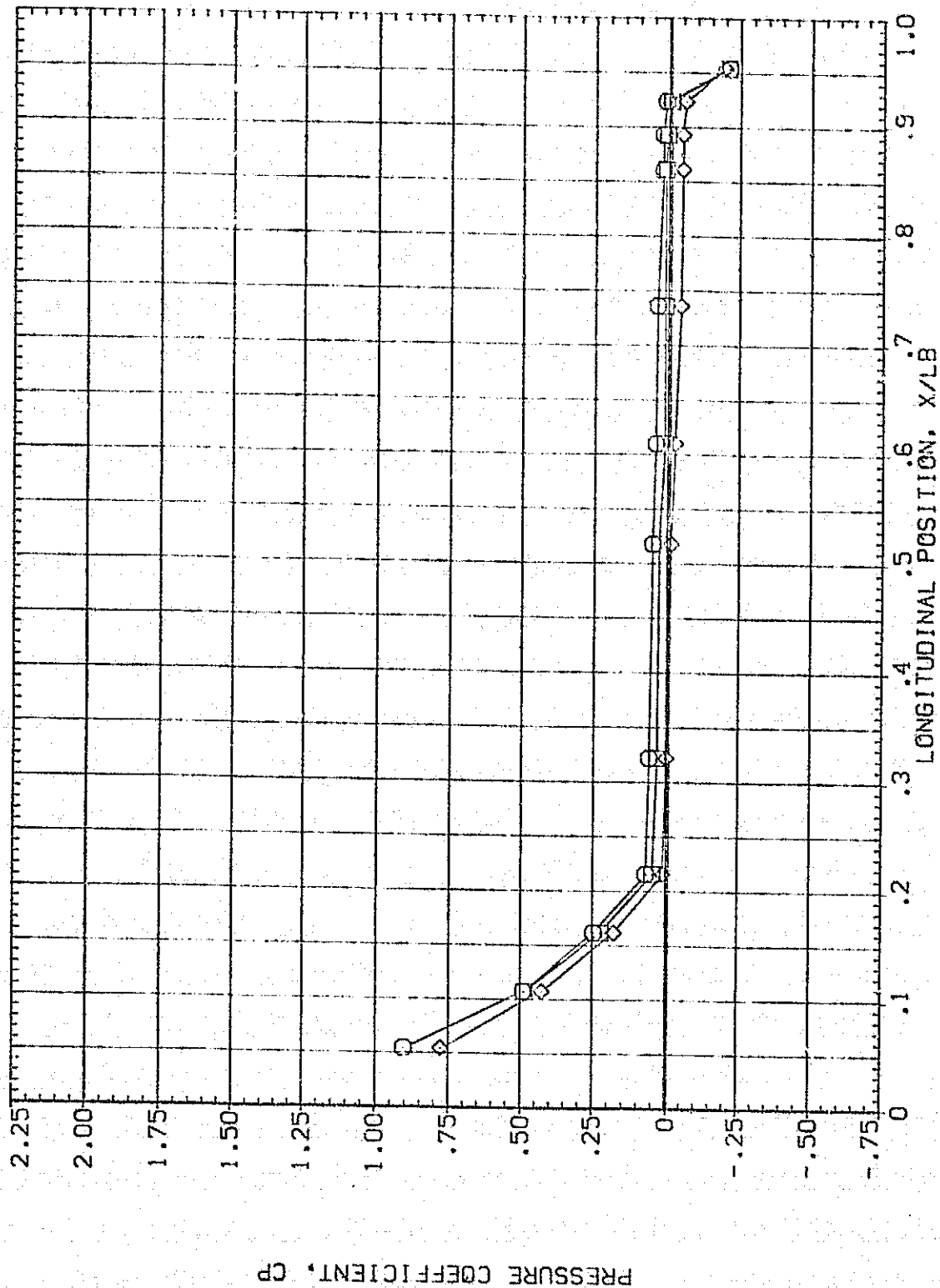


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A006)

SYMBOL THETA ALPHA MACH  
 O 247.500 12.570 1.970  
 □ 270.000  
 ◇ 232.500

PARAMETRIC VALUES  
 BETA .000  
 MDUNT 1.000  
 OFFSET PHI 20.000  
 .000

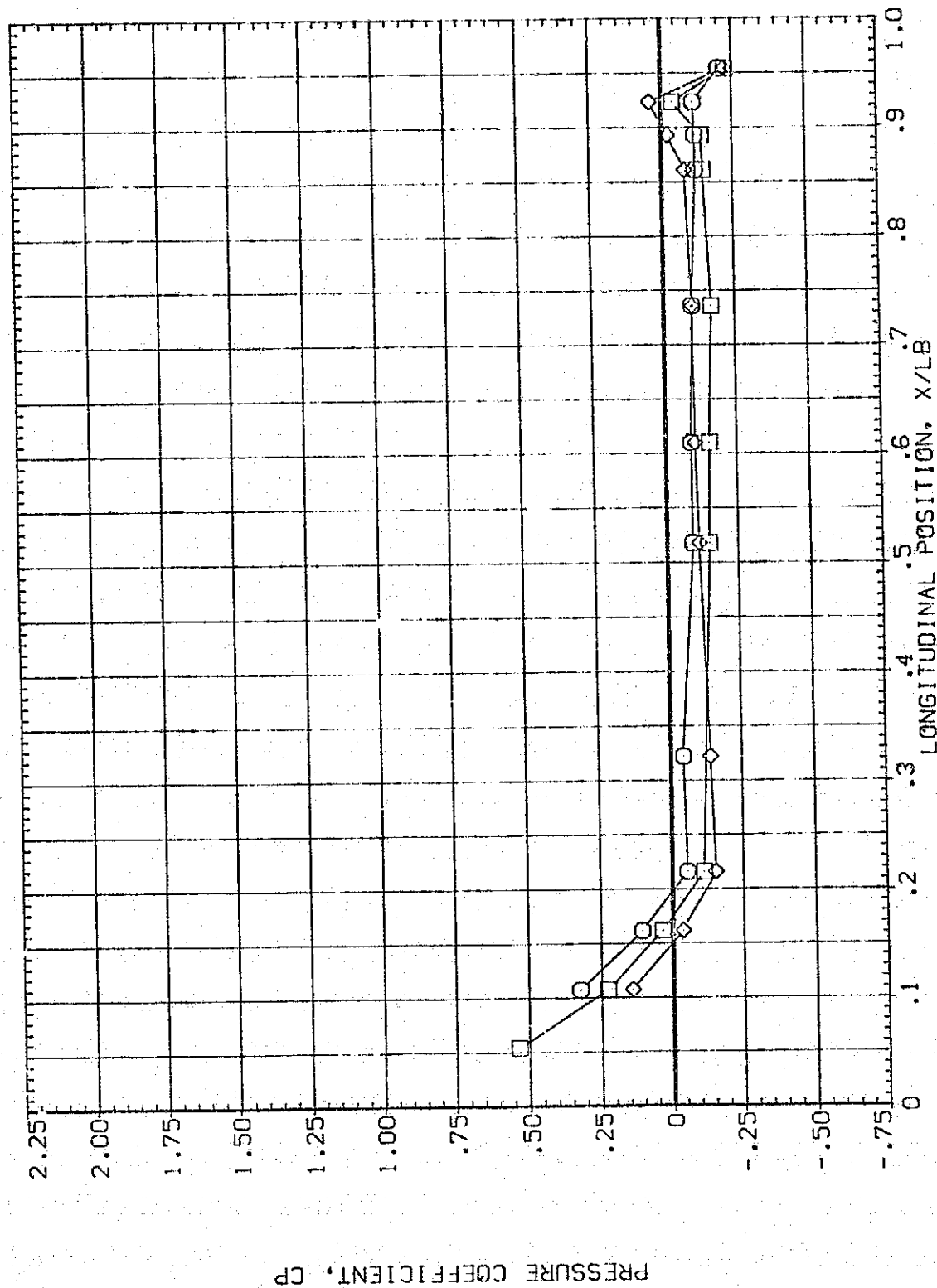


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	BACH	BETA	PARAMETRIC VALUES
○	315.000	12.570	1.970	.000	OFFSET
□	326.000			1.000	PHI
◇	348.000				

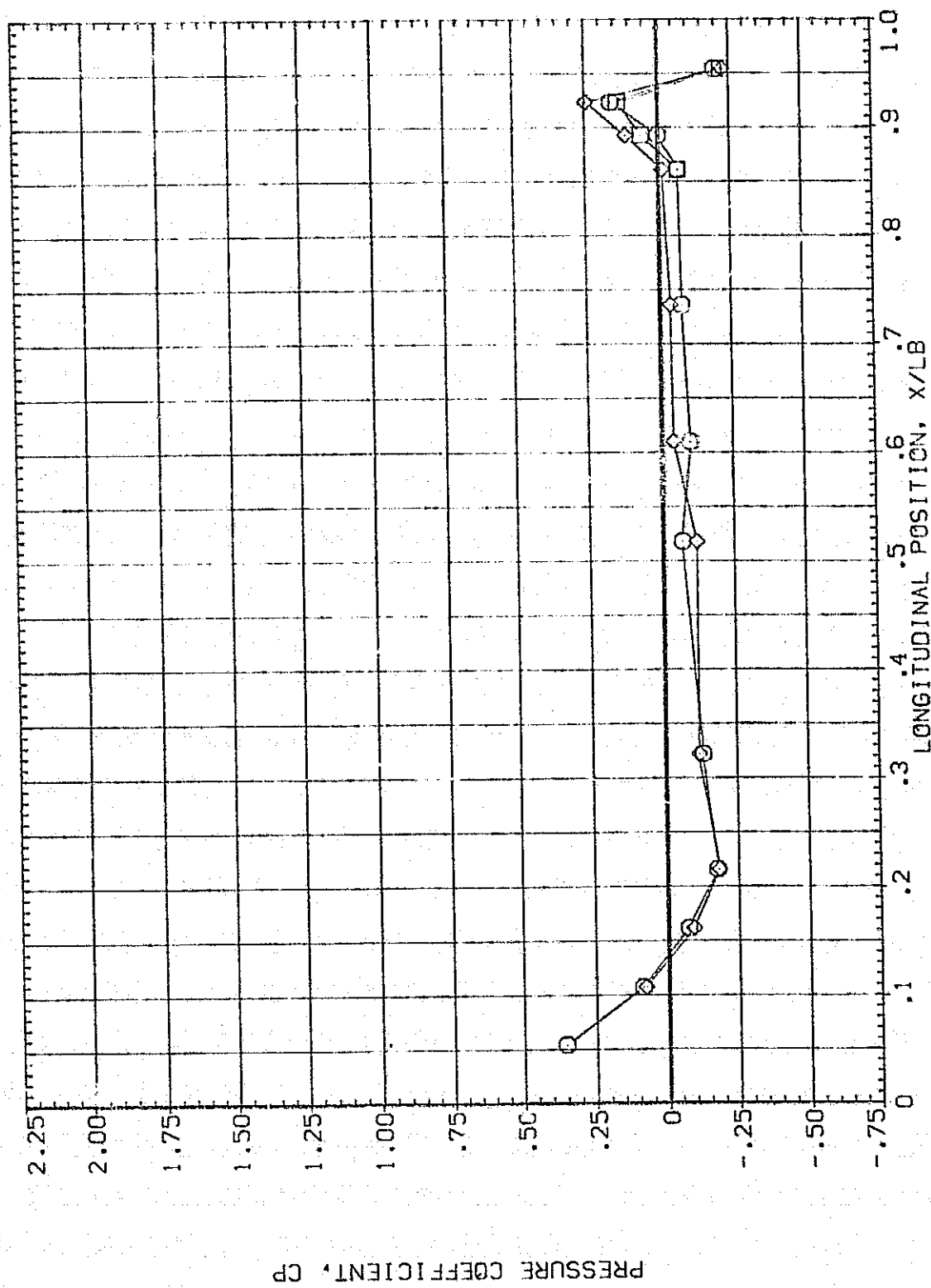


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 BETA .000  
 OFFSET 1.000  
 PHI 20.000  
 MOUNT .000

SYMBOL  
 THETA .000  
 ALPHA 16.660  
 MACH 1.960  
 14.000  
 24.000

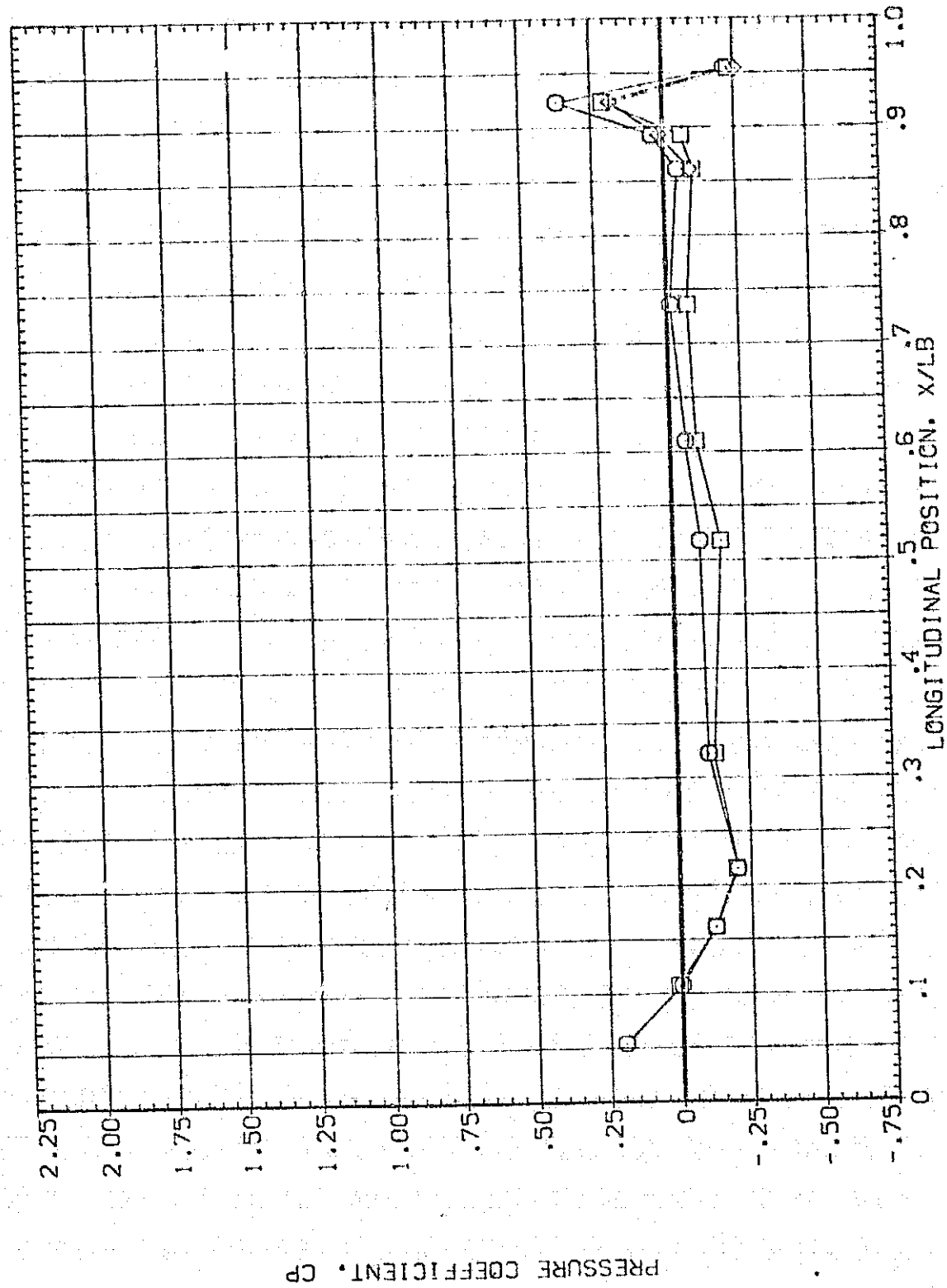


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THEIA 45.000  
 37.500  
 30.000

ALPHA 16.660

MACH 1.960

BETA  
 HOUNT

PARAMETRIC VALUES  
 .003  
 1.000  
 PH1

20.000  
 .003

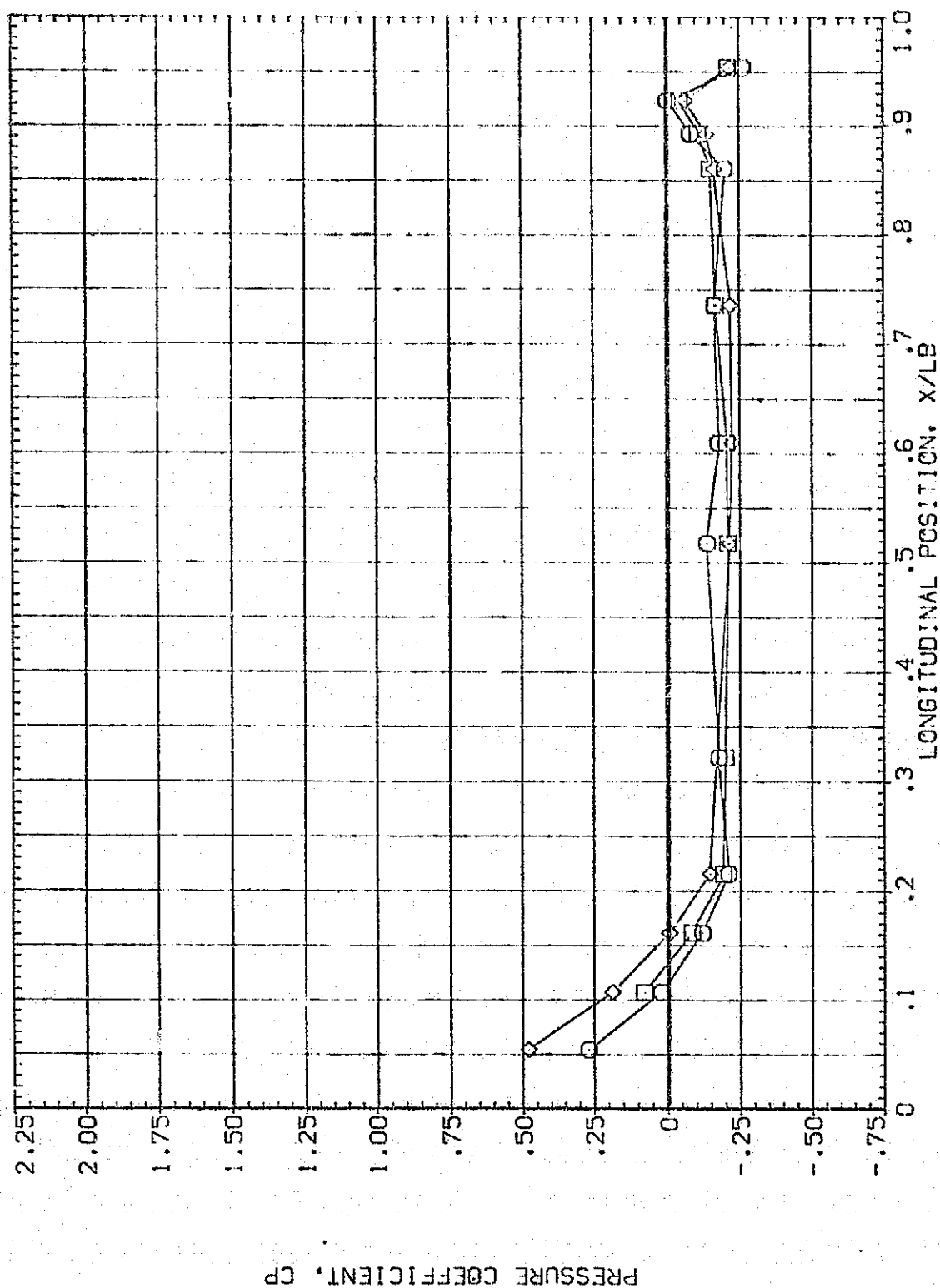


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A007)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20.000
○	112.500	16.660	1.960	MOUNT	PHI	.000
□	135.000					
◇	157.500					

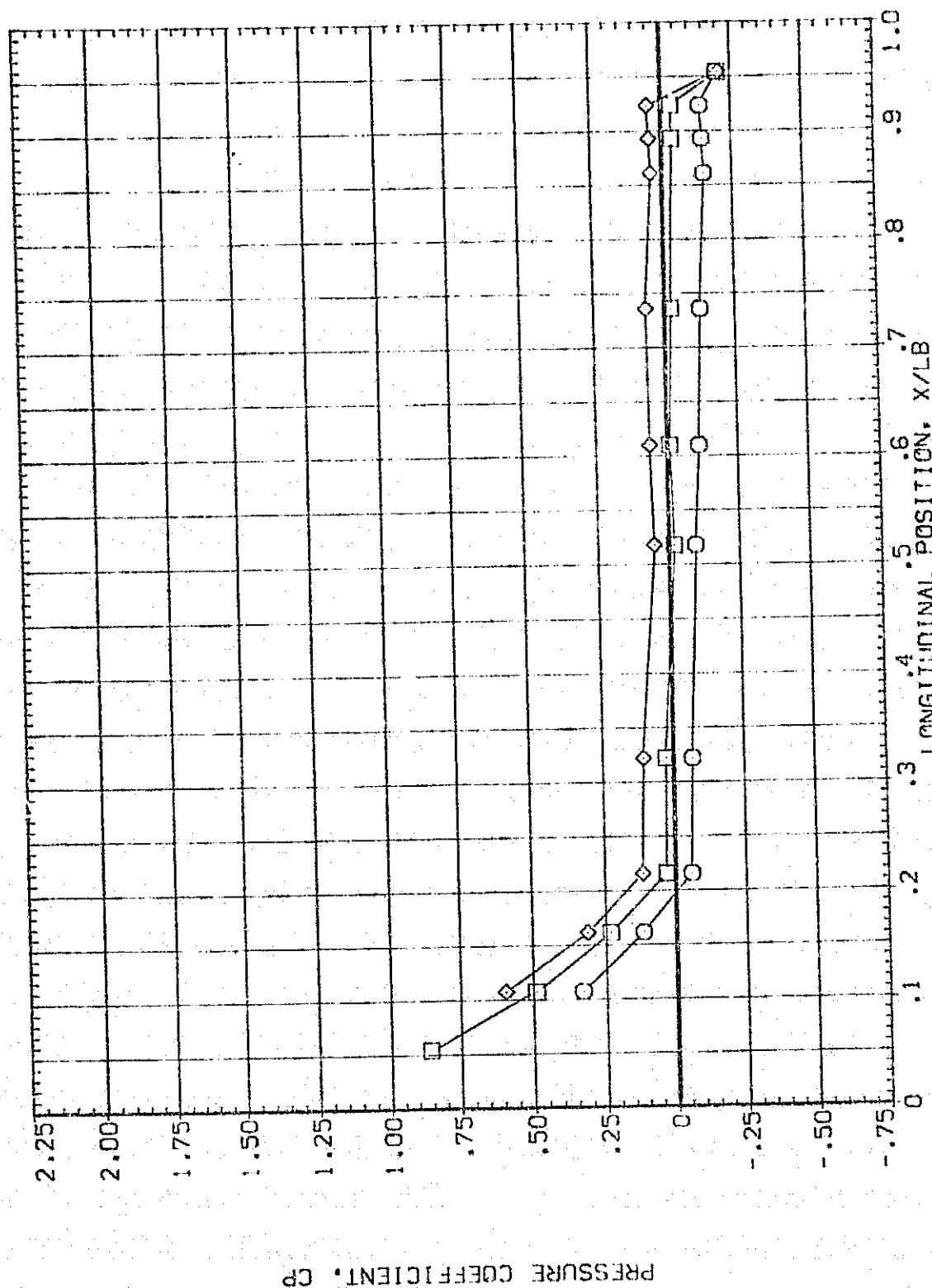


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A007)

SYMBOL	THETA			ALPHA			MACH			PARAMETRIC VALUES			
	130.000	232.500	225.000	16.660	16.660	16.660	1.960	1.960	1.960	BETA	OFFSET	PHI	20.000
○										1.000	.000		.000
□										1.000	.000		.000
◇										1.000	.000		.000

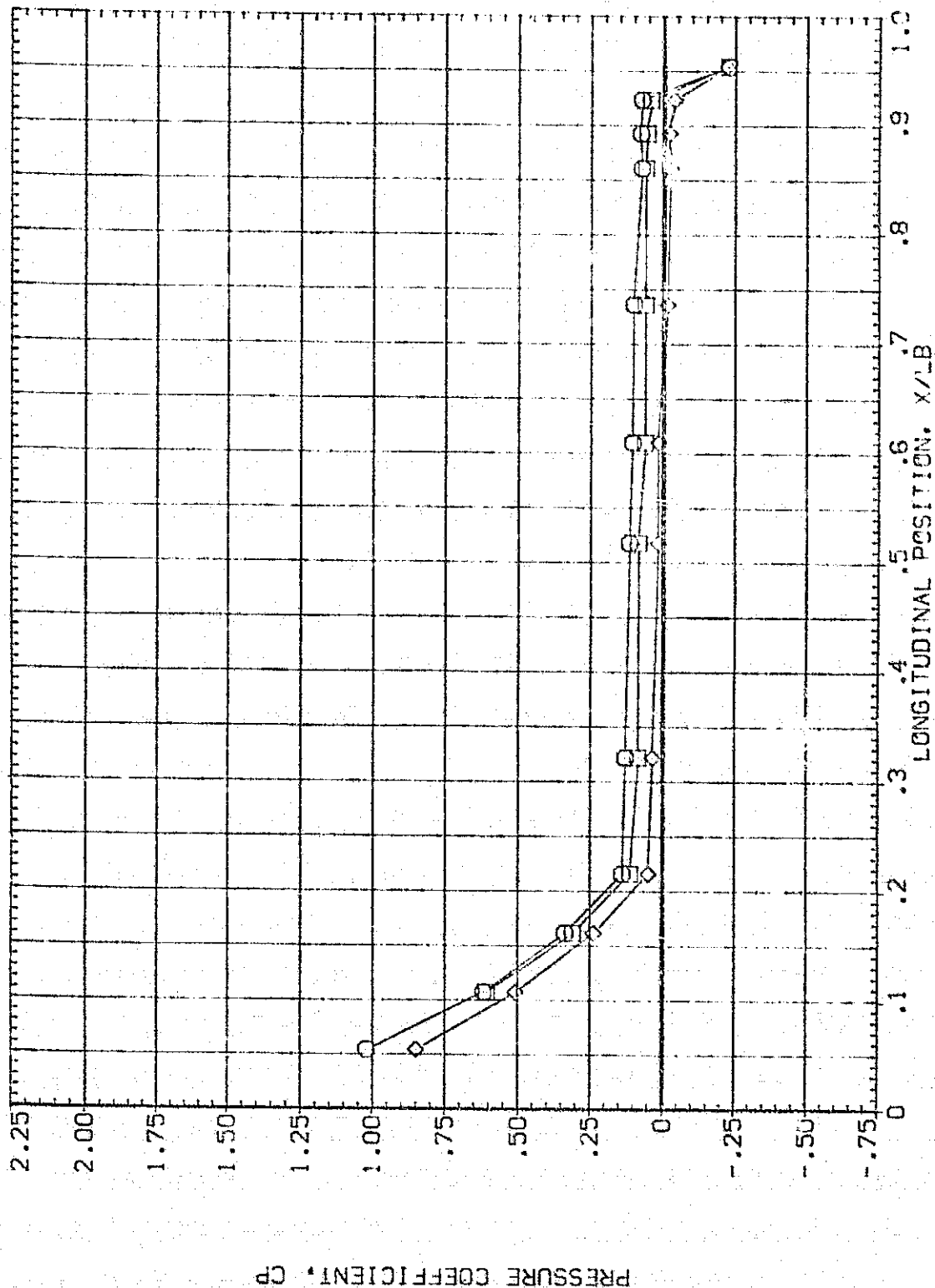


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A007)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	16.860	1.960	1.000	.000	20.000
□	270.000			1.000	.000	.000
◇	292.500					

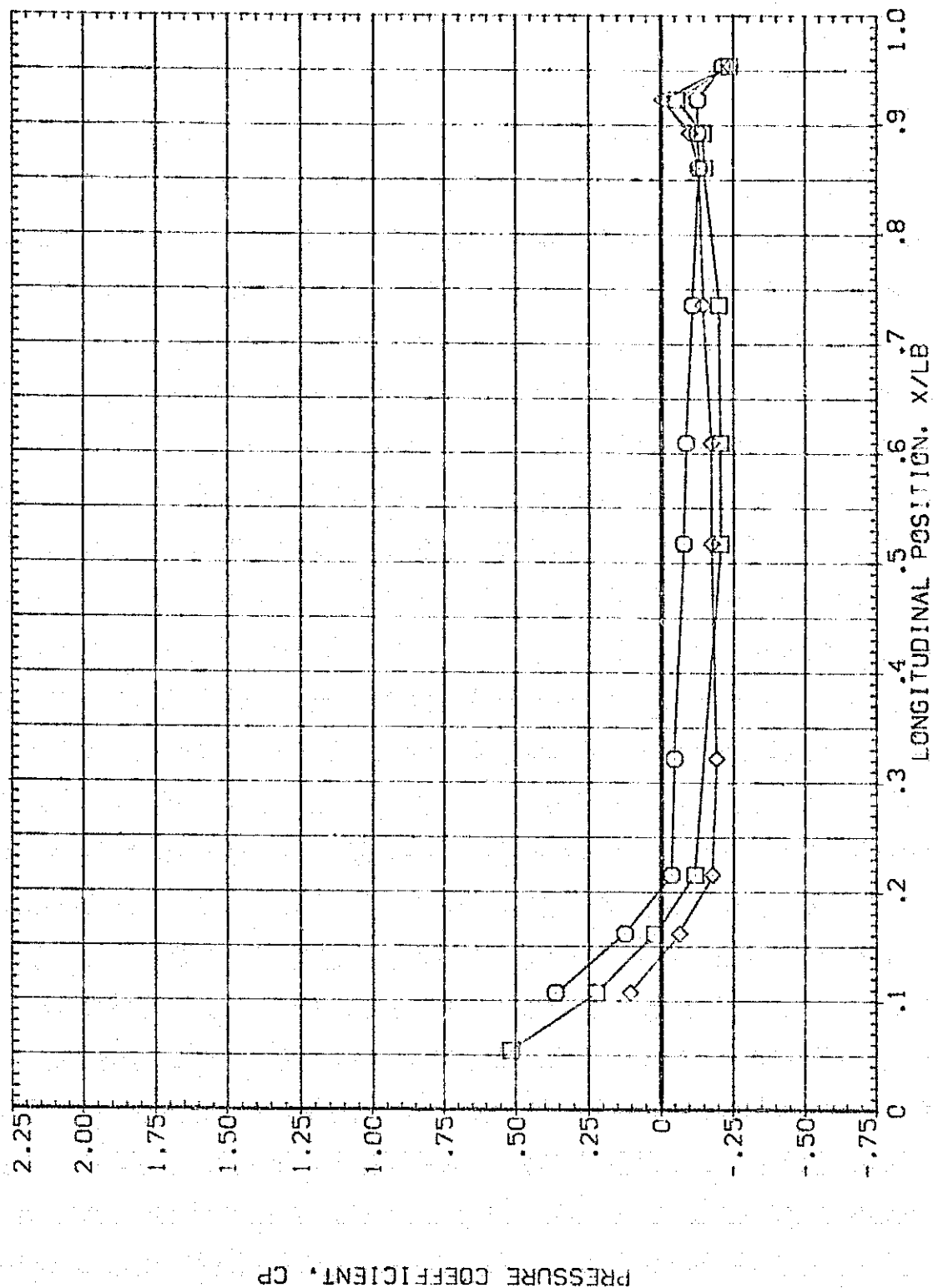


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 O 315.000 16.560 1.560  
 □ 326.000  
 ◇ 346.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 .000

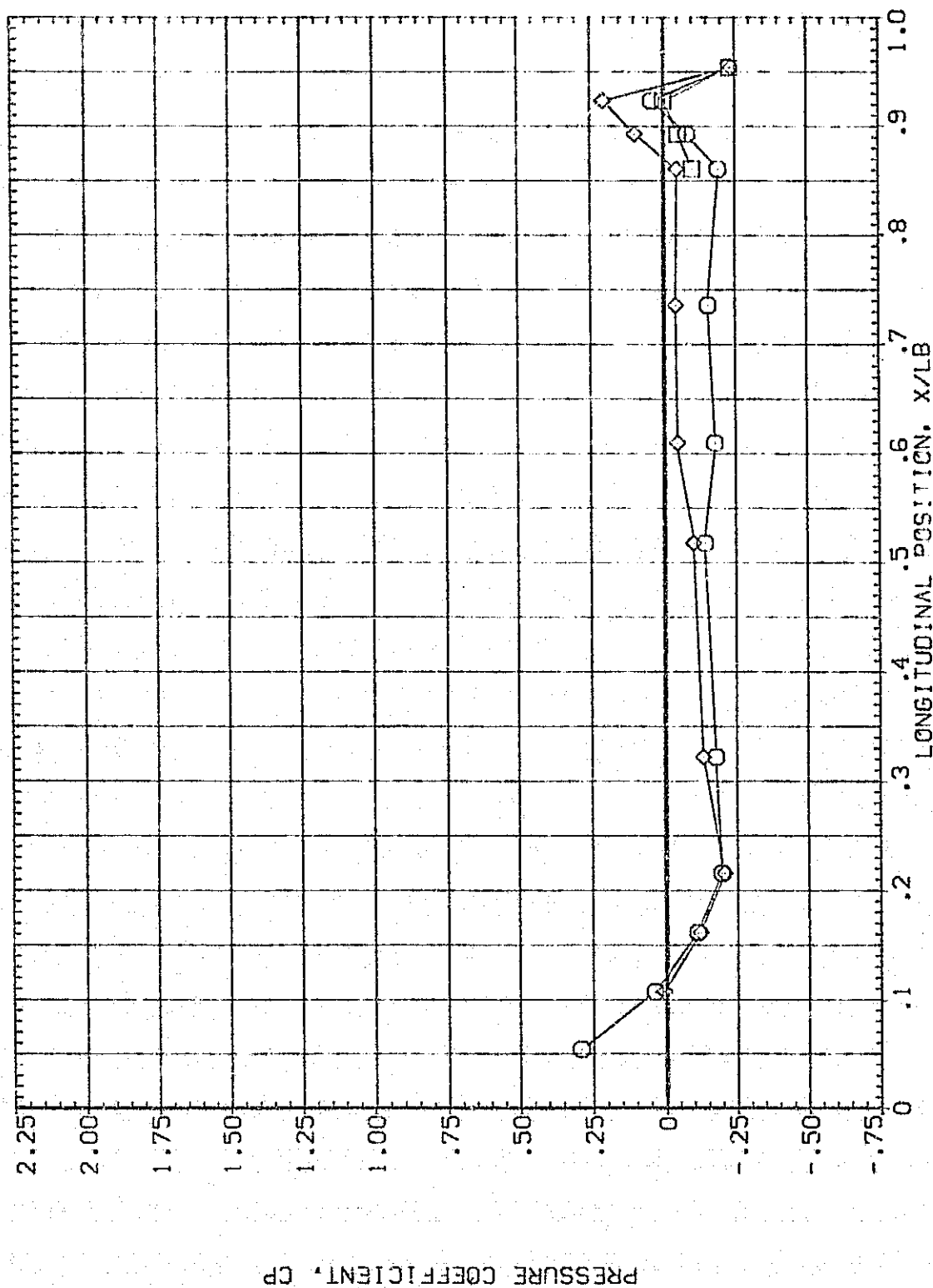


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (A-2F) MCR0200 EXTERNAL TANK. T1 (PIA008)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES			
				BETA MOUNT	OFFSET	PHI	20.000 .000
○	.000	20.740	1.860				
□	14.000						
◇	24.000						

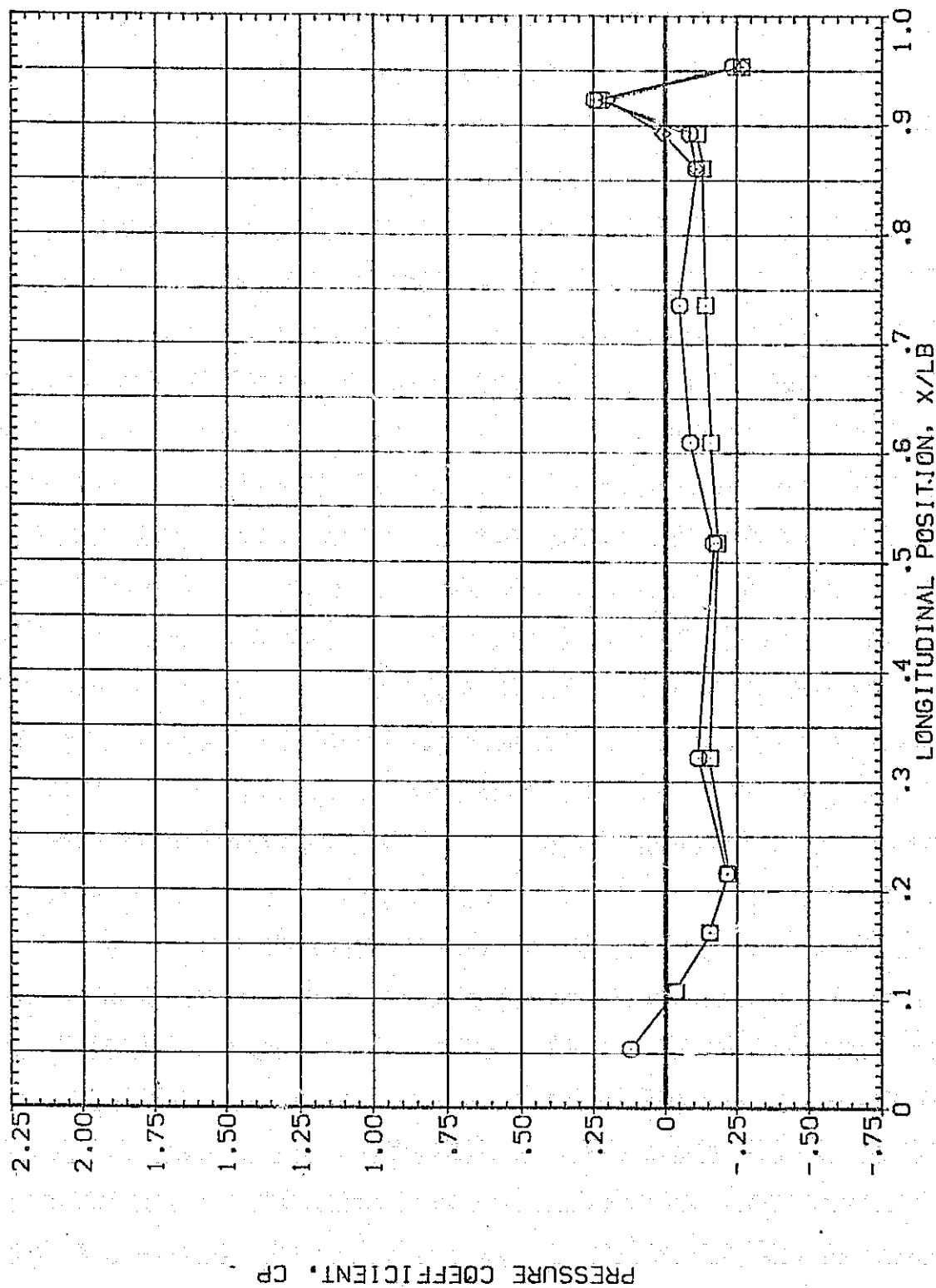


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ◇  
 □  
 ○

THETA  
 45.000  
 37.500  
 30.000

ALPHA  
 20.740

MACH  
 1.960

PARAMETRIC VALUES  
 .000 .000  
 BETA OFFSET  
 MDUNT PHI

20.000  
 .000

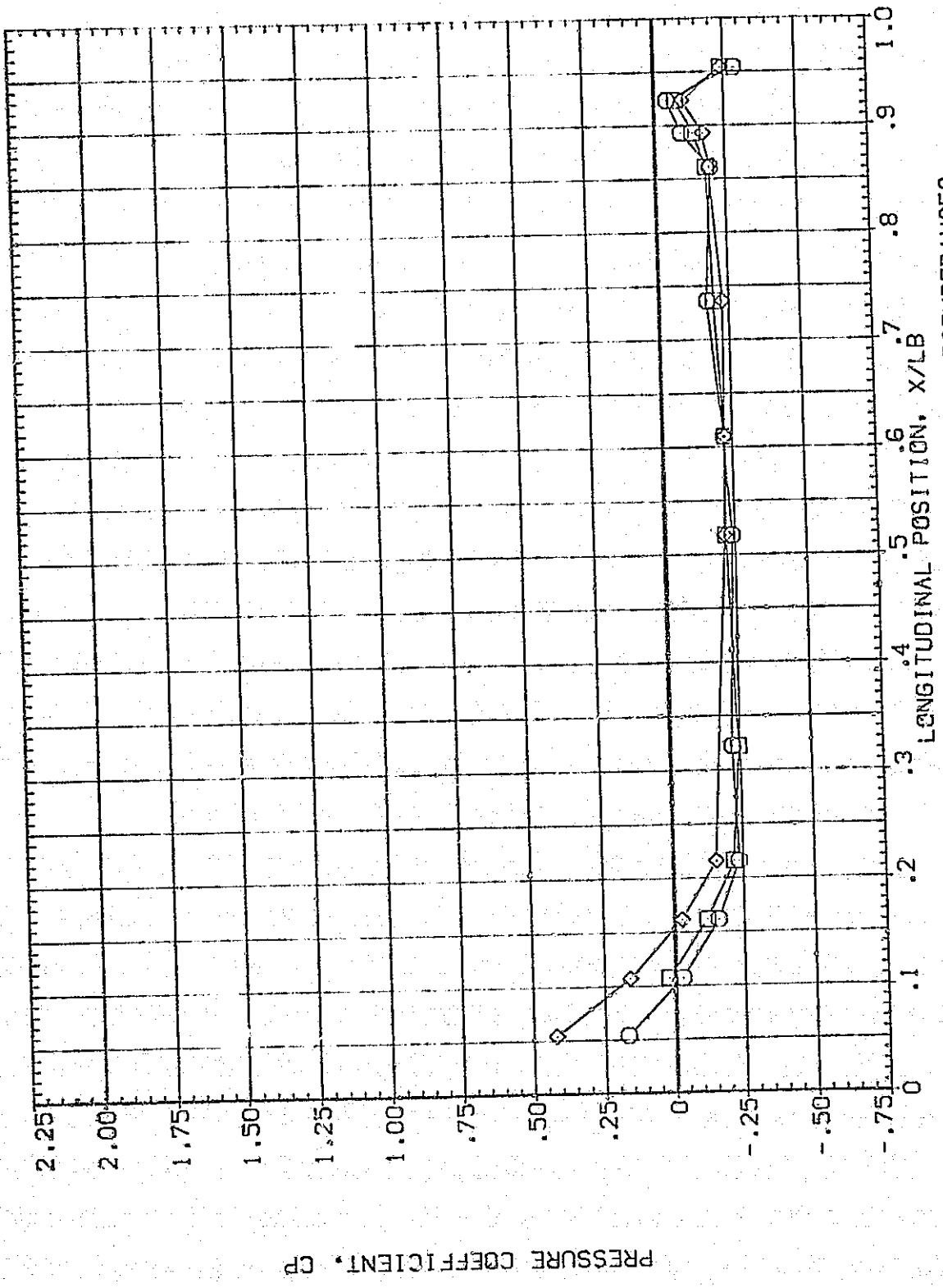


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA008)

SYMBOL THETA ALPHA MACH  
 O 112.500 20.740 1.960  
 □ 135.000  
 ◇ 157.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 .000

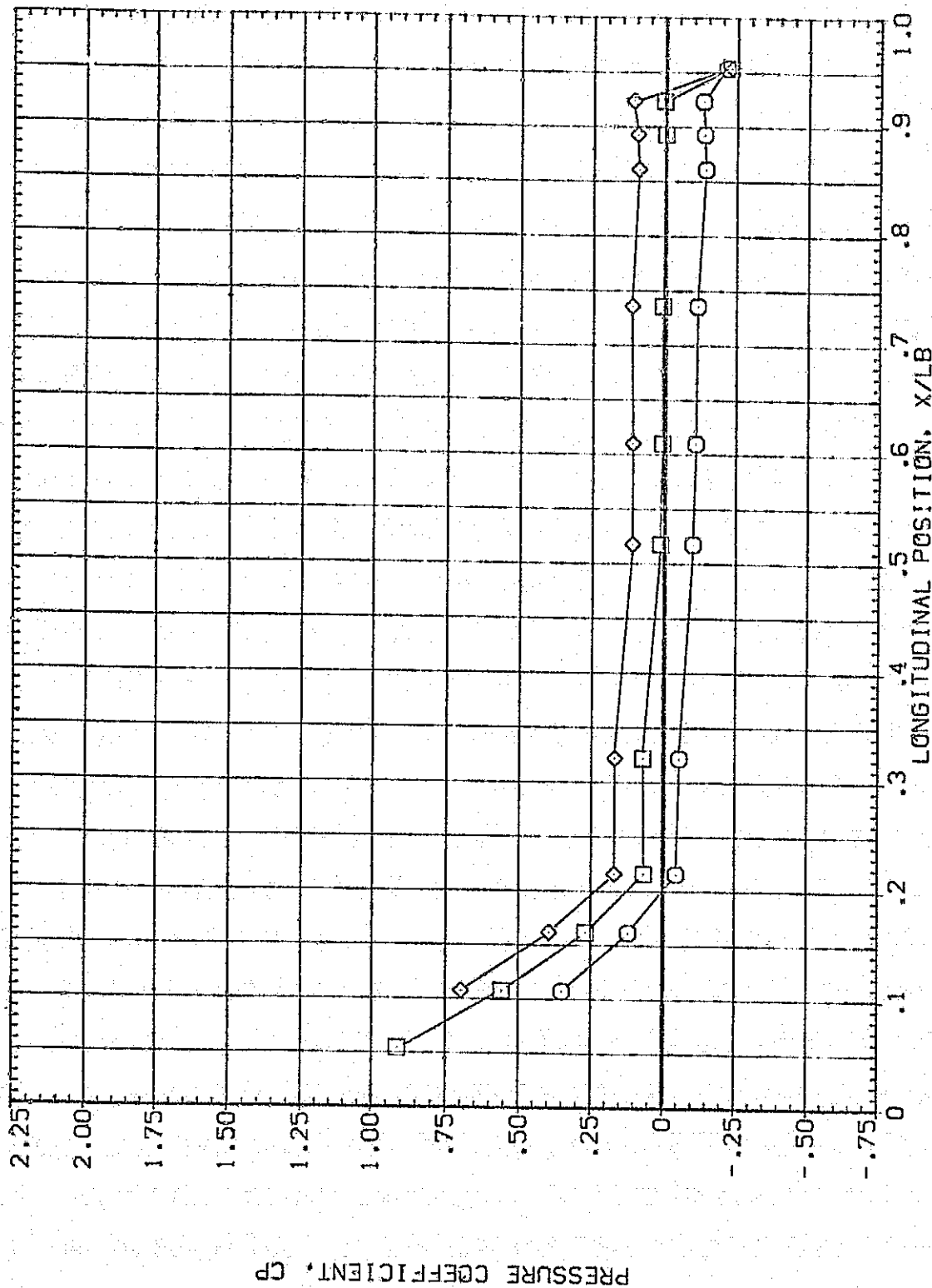


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20.000
○	130.000	20.740	1.950	MDUNT	PHI	.000
□	232.500					
◇	225.000					

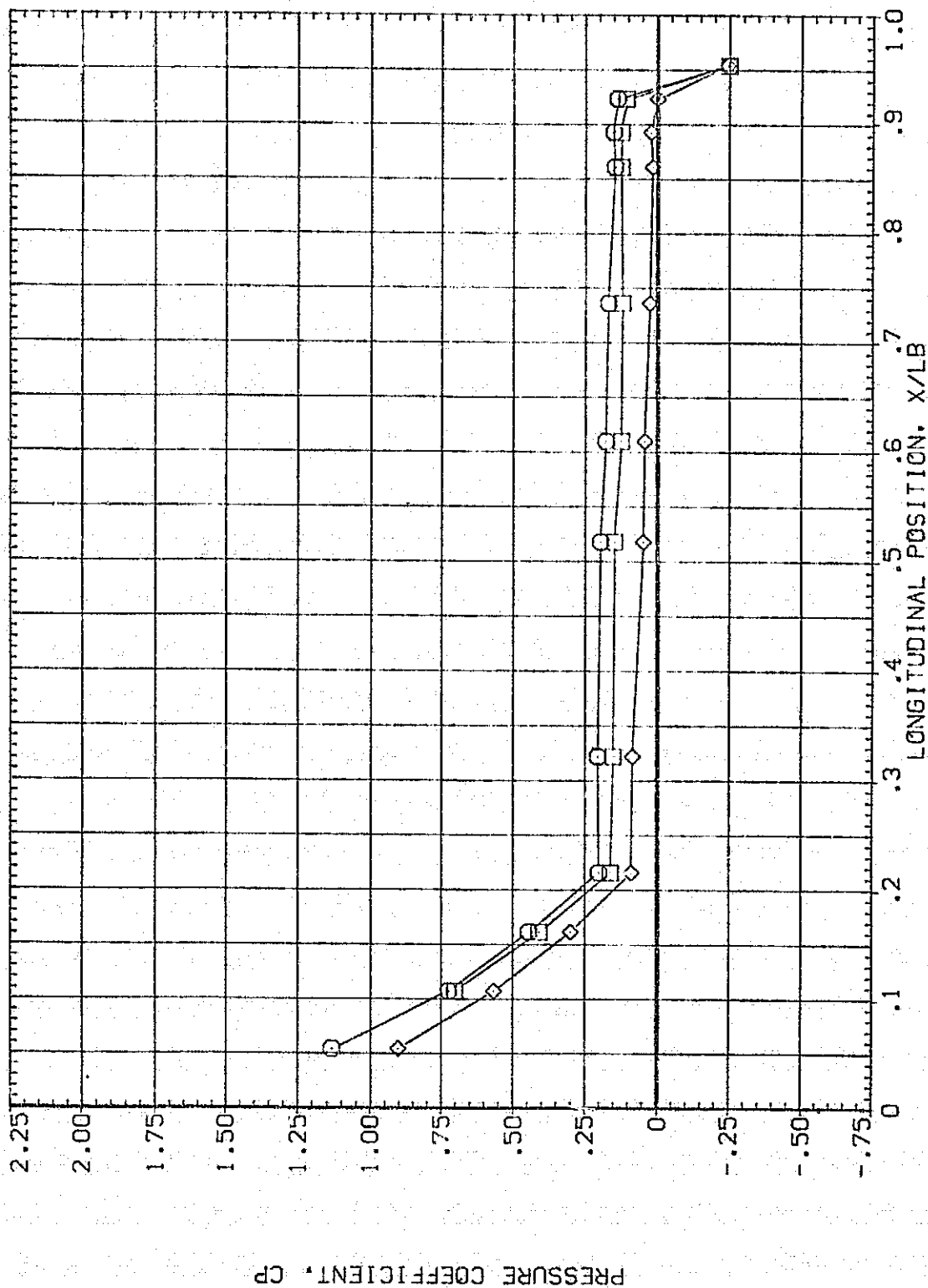


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A008)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	20.740	1.960	1.000	.000	.000
□	270.000			1.000	.000	.000
◇	292.500			1.000	.000	.000

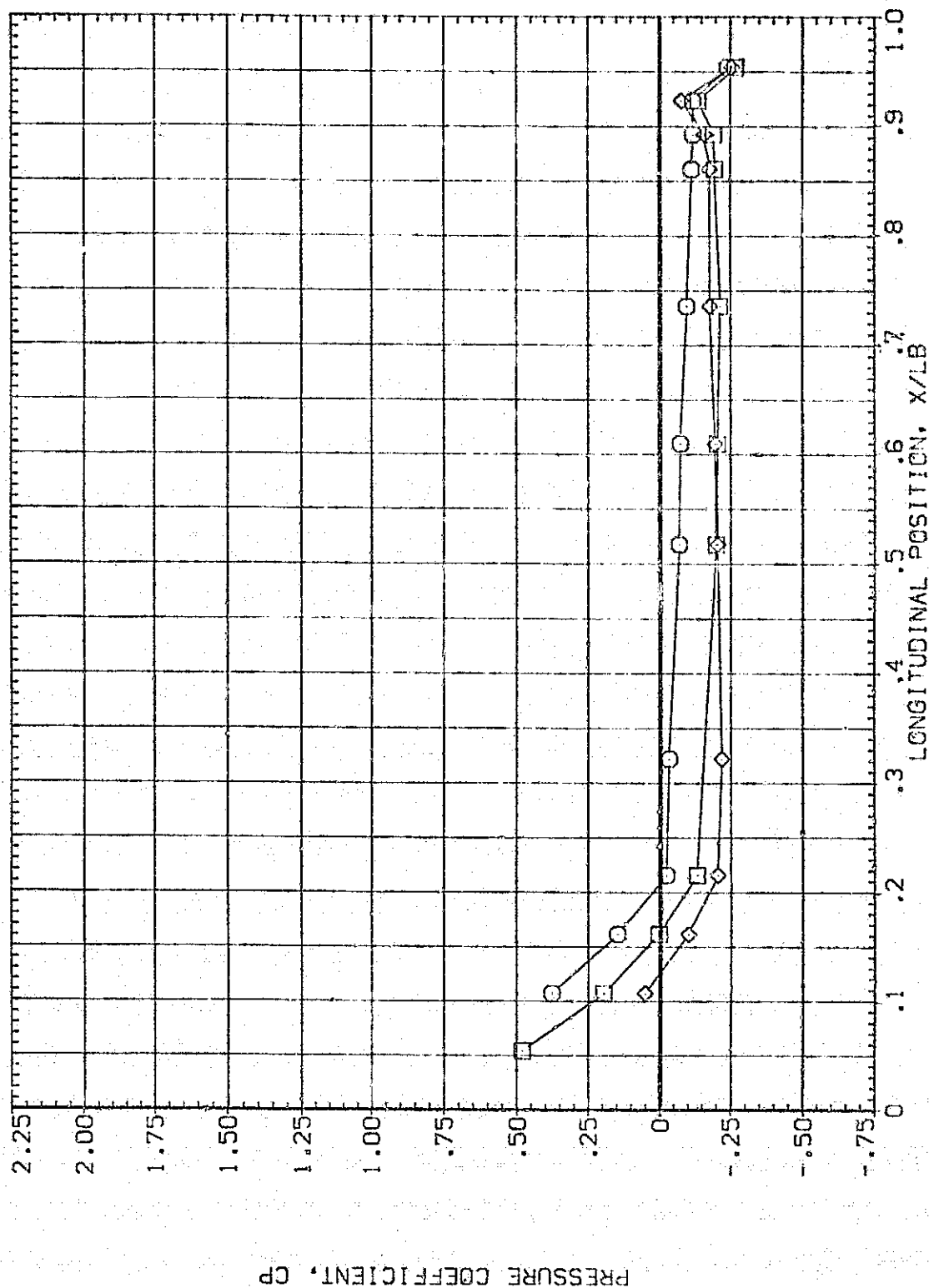


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	20.740	1.960	0.000	OFFSET
□	326.000			1.000	PHI
◇	346.000			20.000	

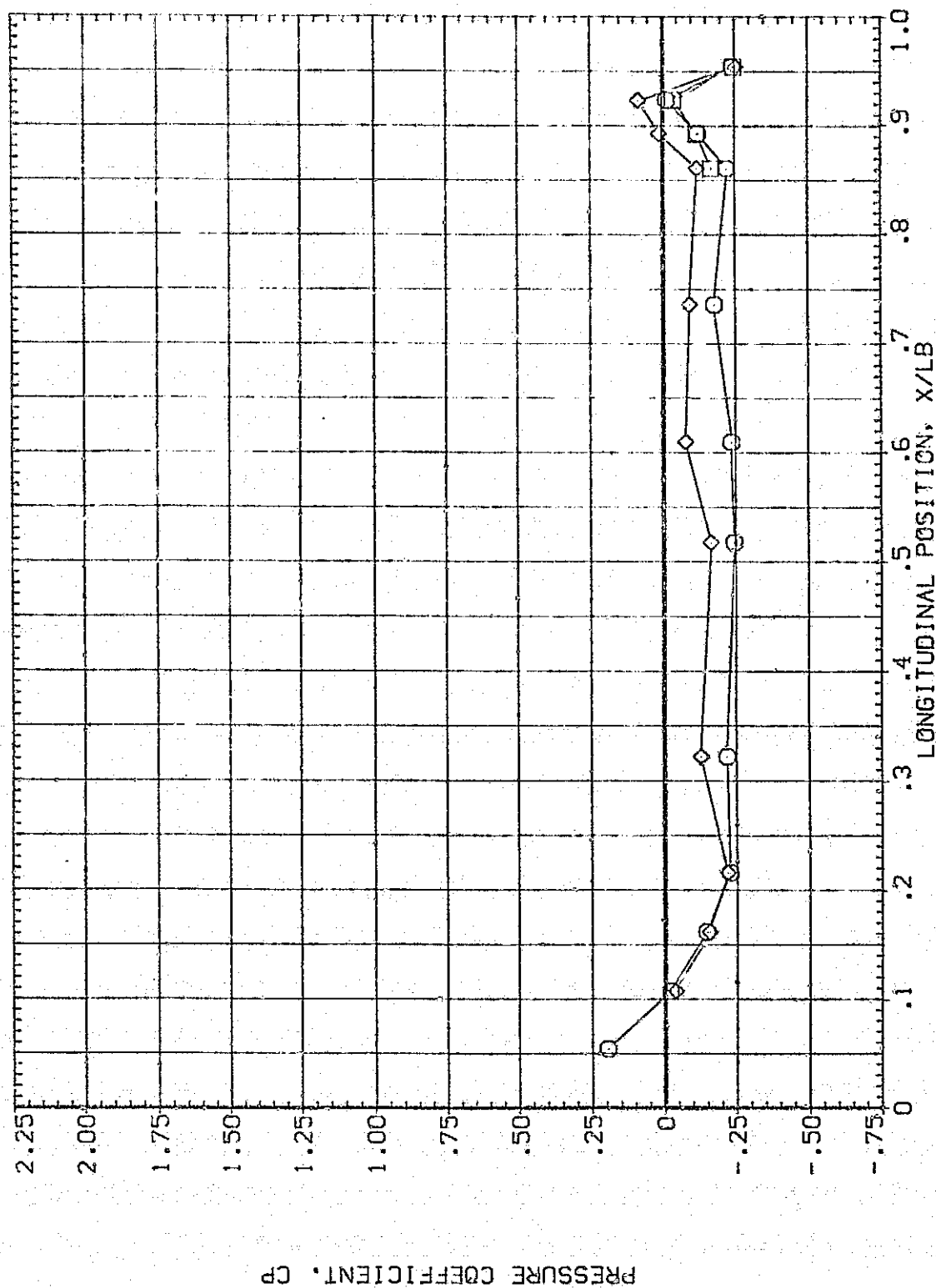


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A009)

SYMBOL  
 ◇  
 □

TUNTA .000  
 14.000  
 24.000

ALPHA 24.850

MACH 1.960

PARAMETRIC VALUES  
 .000 .000 20.000  
 BETA OFFSET  
 MOUNT 1.000 PHI .000

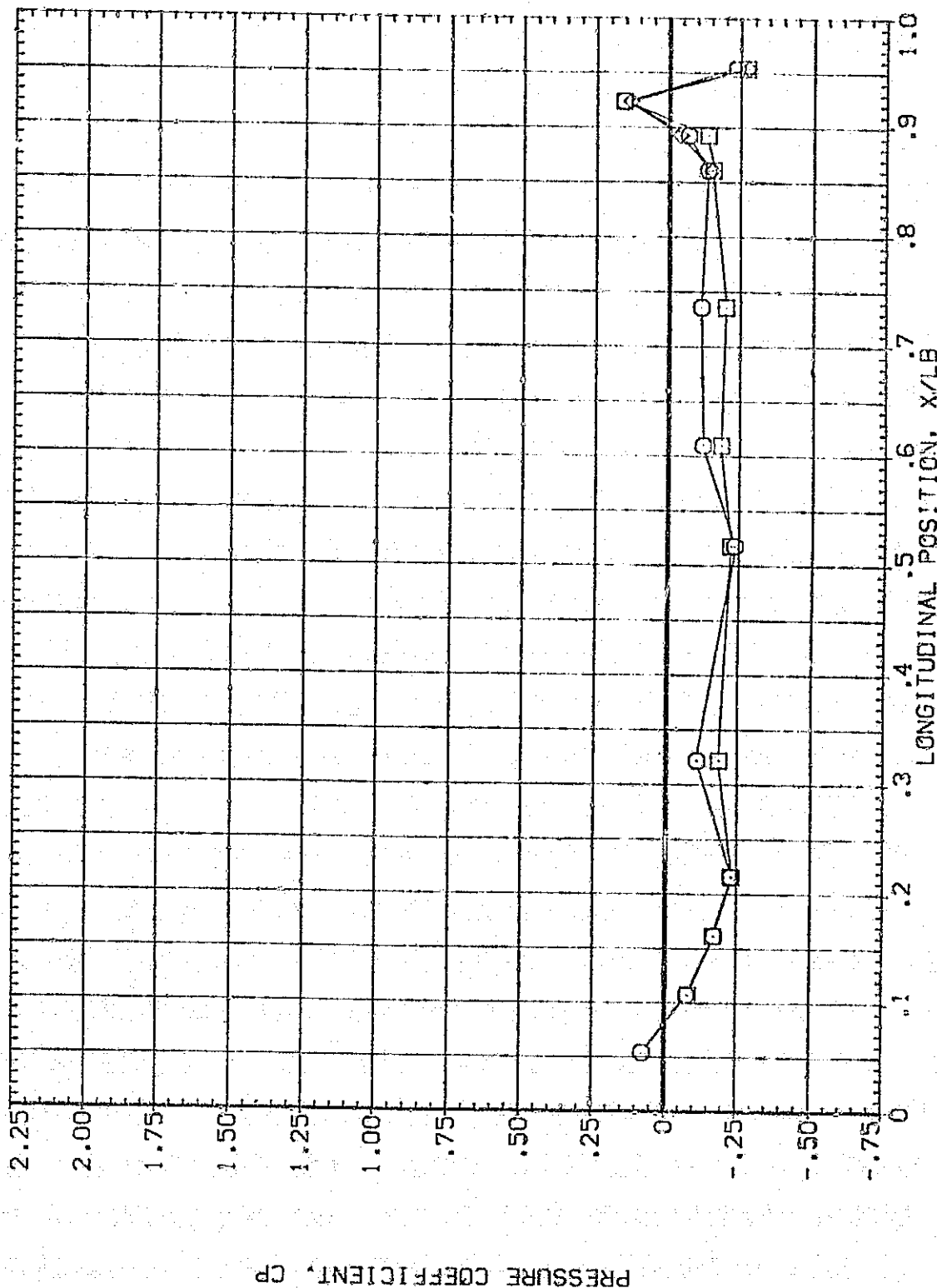


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 O 45.000 24.850 1.960  
 □ 37.500  
 ◇ 30.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 .000

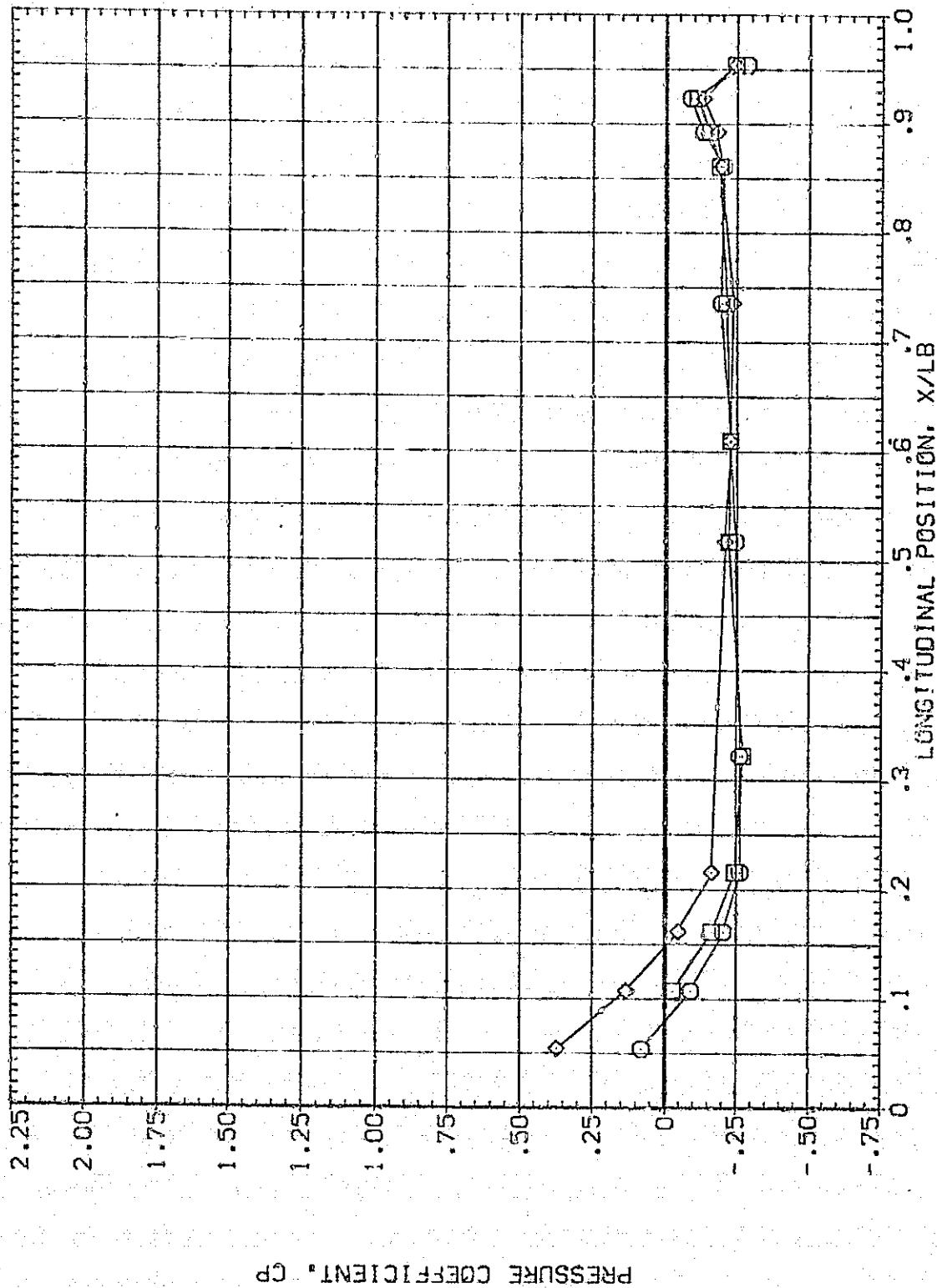


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



# MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (PIA009)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	24.850	1.960	MCUNT	1.000	20.000
□	135.000					.000
◇	157.500					

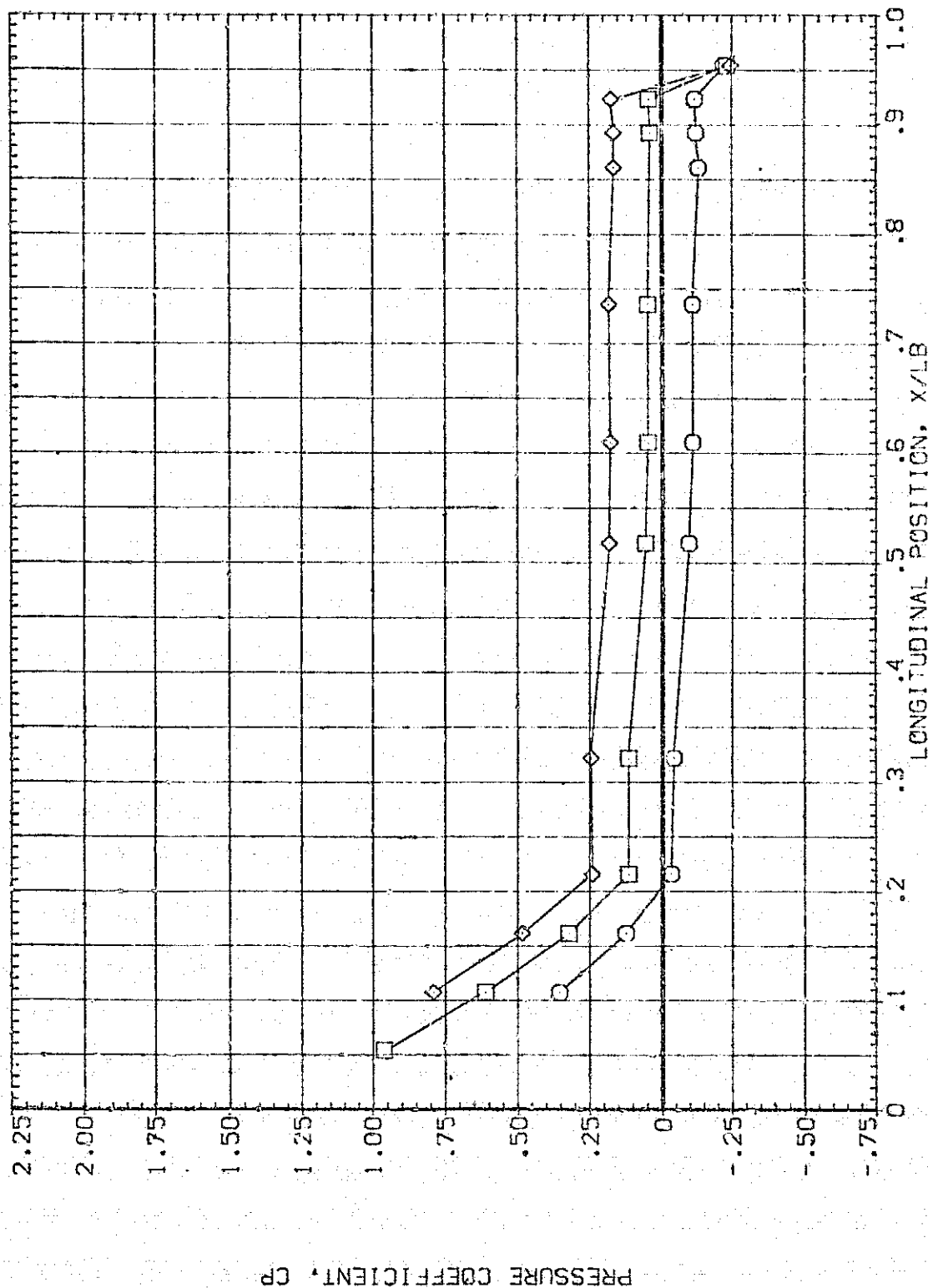


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 190.000  
 232.500  
 225.000

ALPHA  
 24.850

MACH  
 1.960

PARAMETRIC VALUES  
 BETA  
 .000  
 .000  
 .000

OFFSET  
 PHI  
 .000  
 .000  
 .000

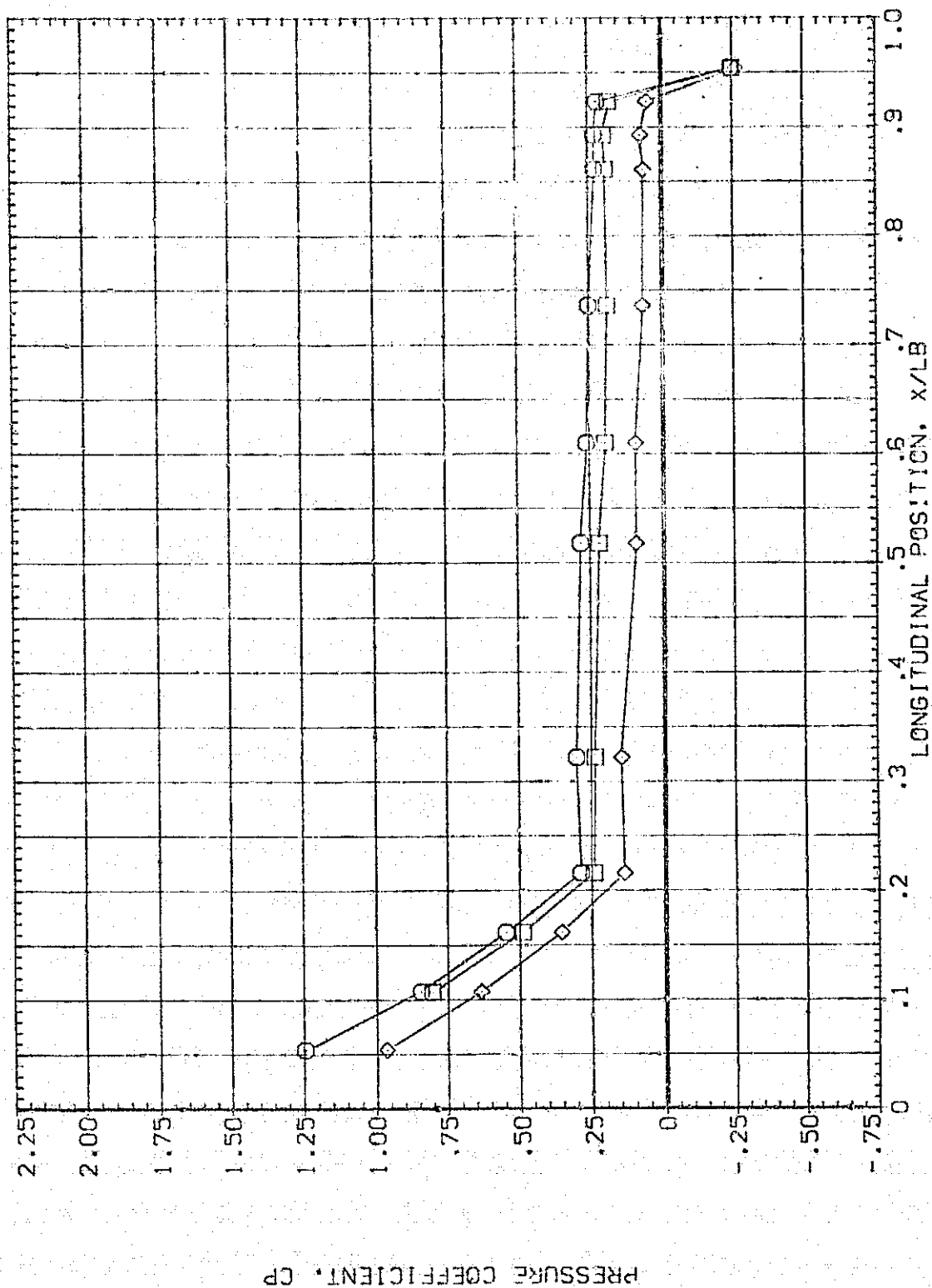


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A009)

SYMBOL THETA ALPHA MACH  
 ○ 217.500 24.850 1.960  
 □ 270.600  
 ◇ 292.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 .000

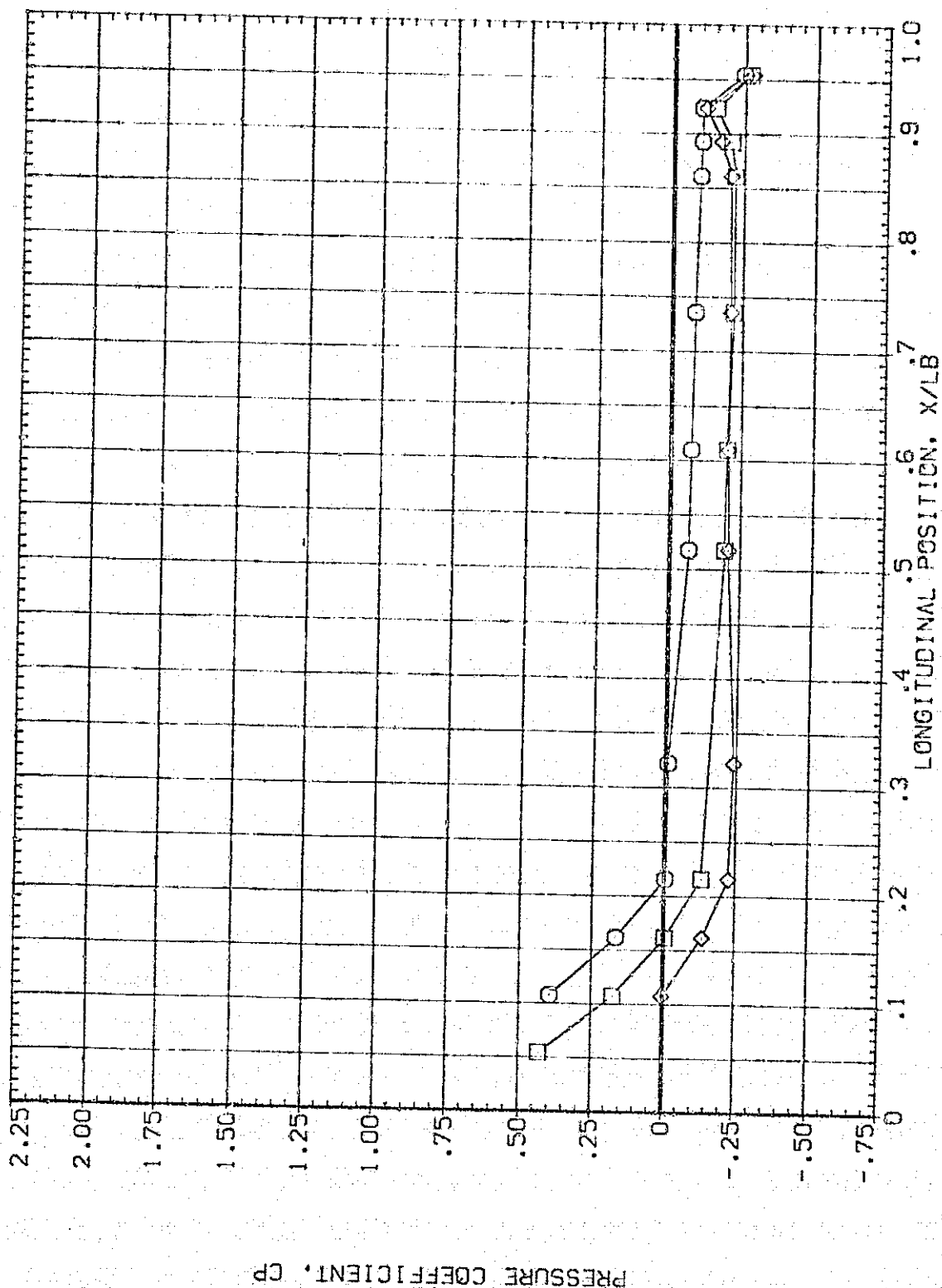


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

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 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A009)

SYMBOL  
 ○  
 □  
 ◇

THETA 315.000  
 326.000  
 346.000  
 ALPHA 24.850  
 MACH 1.960

BETA .000  
 MOUNT 1.000  
 PHI .000  
 PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 .000

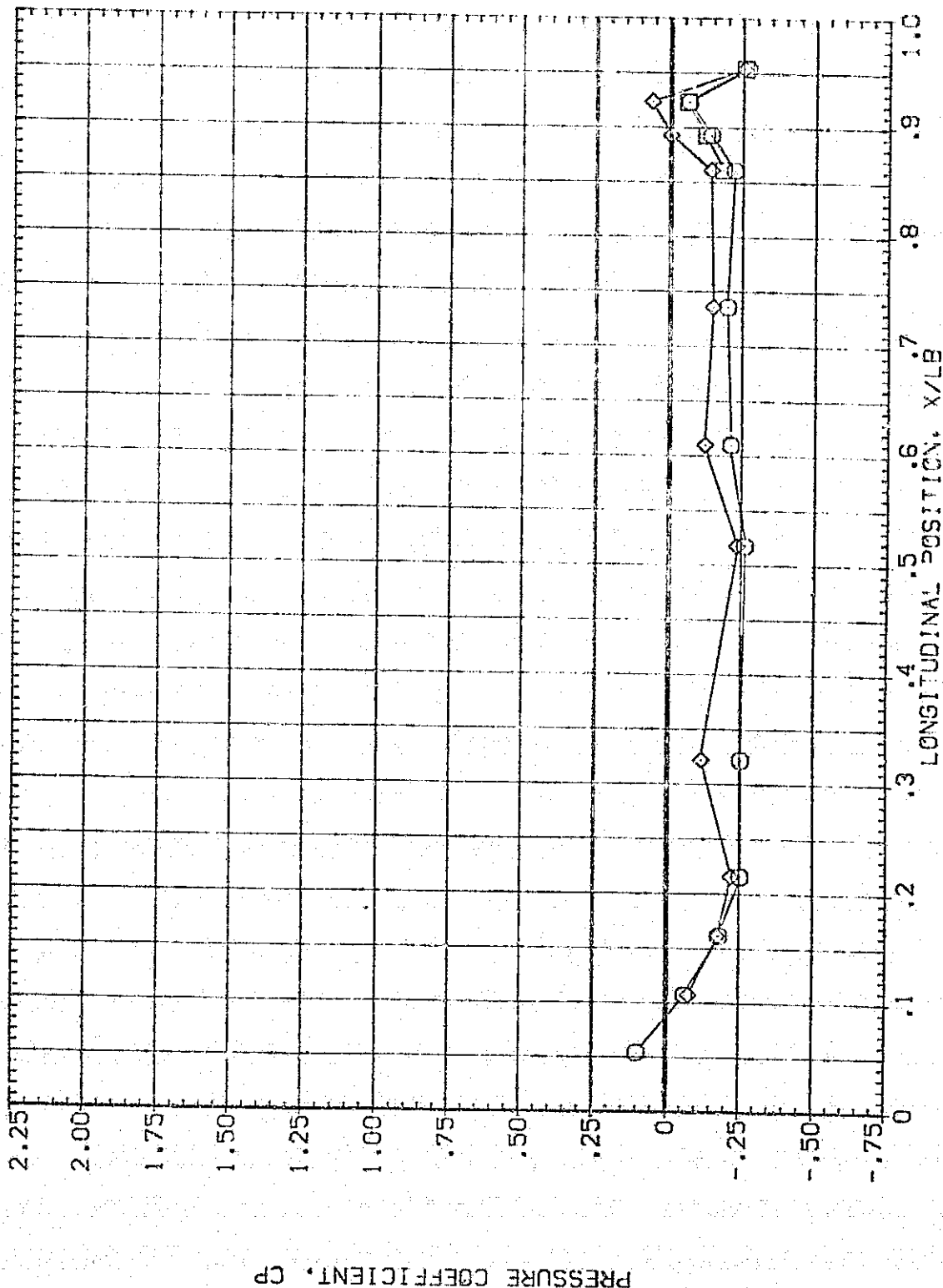


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA010)

PARAMETRIC VALUES  
 .000 .000 20.000  
 1.000 1.000 .000

BETA  
 MOUNT

ALPHA MACH  
 28.950 1.960

THETA  
 .000 14.000 24.000

SYMBOL  
 □ ◇

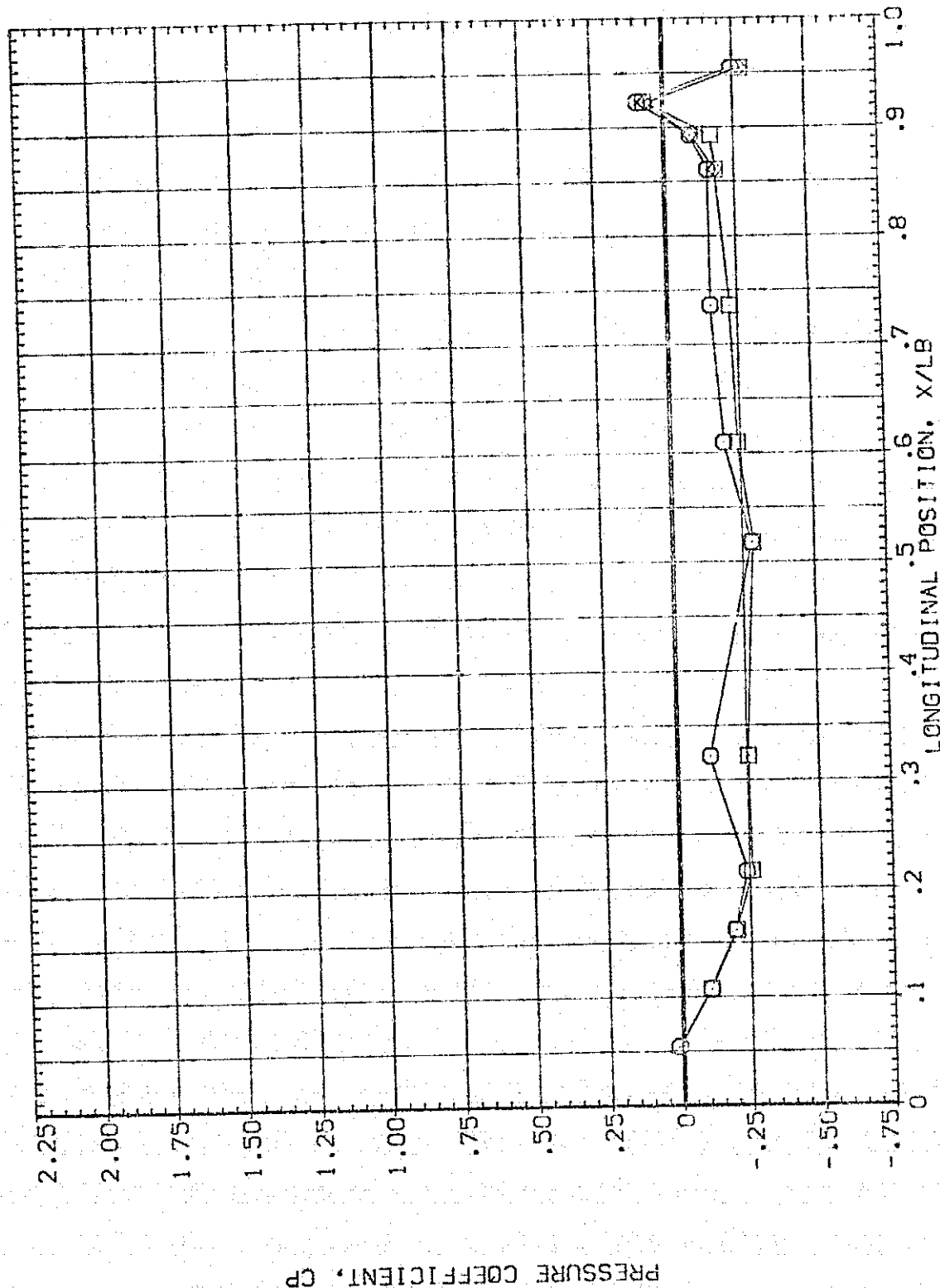


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA010)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20.000
○	45.000	28.950	1.950	1.000	PHI	.000
□	57.500					
◇	30.000					

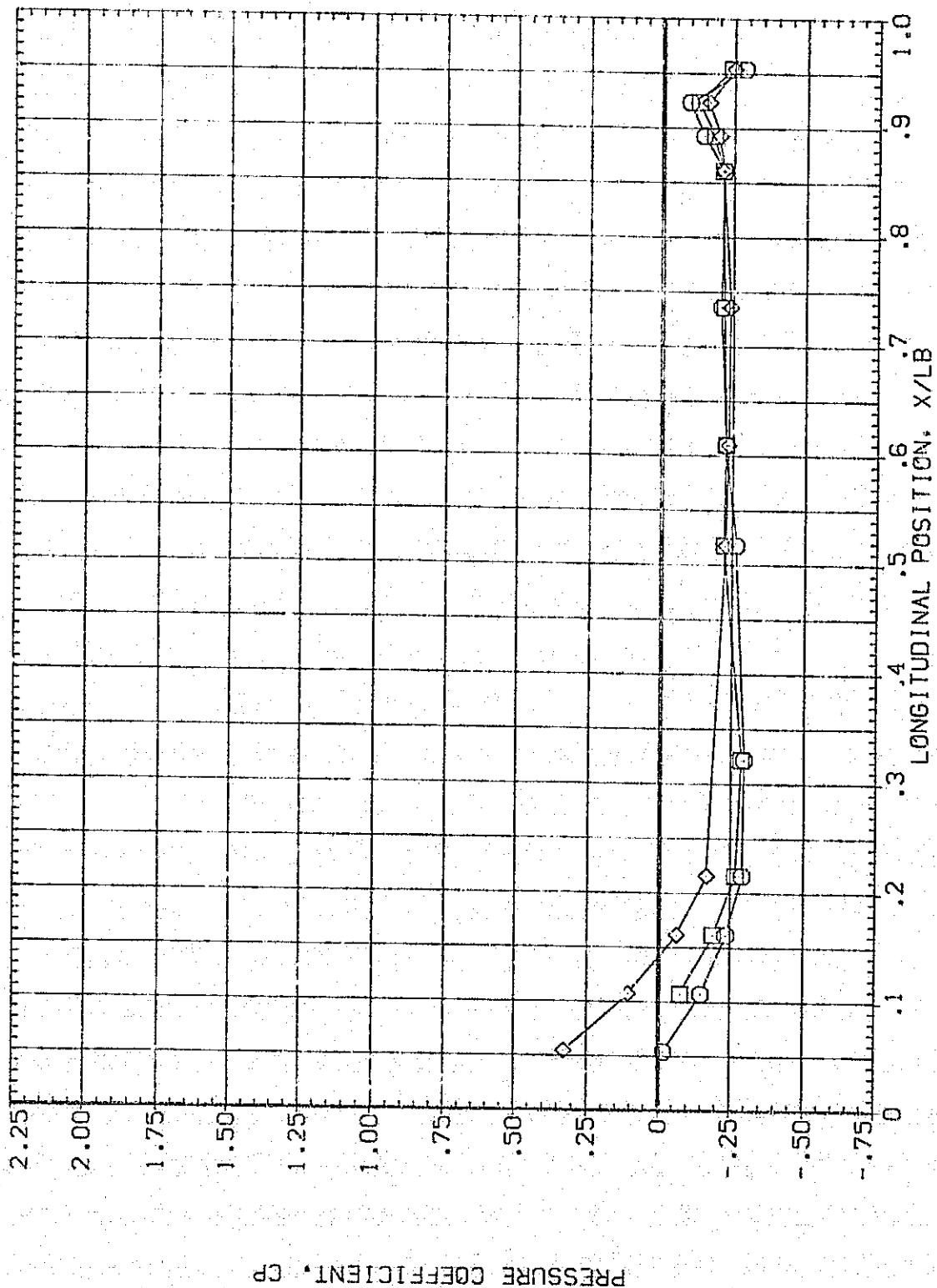


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A010)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	28.950	1.960	1.000	.000	.000
□	135.000					
◇	157.500					

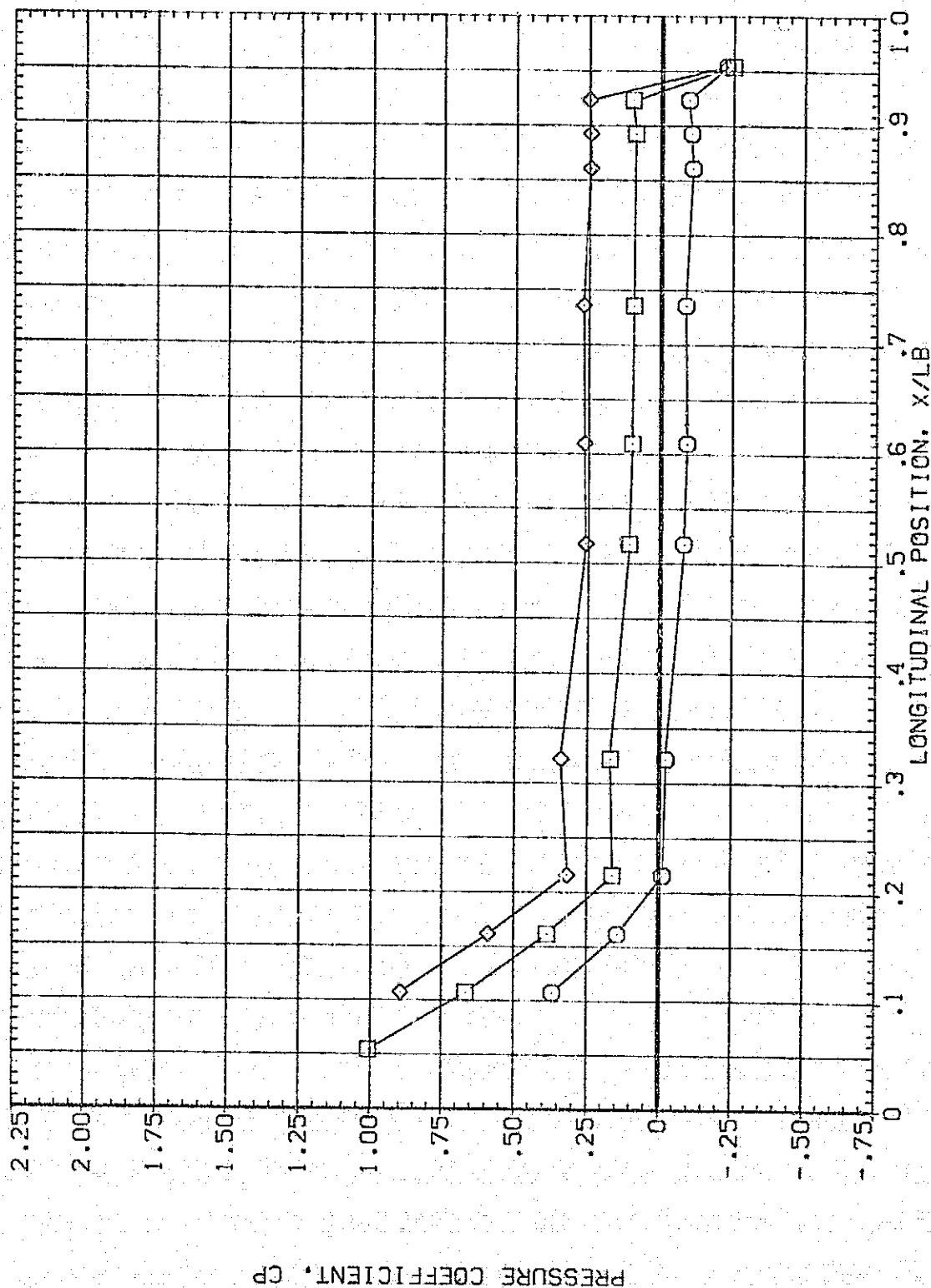


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 ○ 130.000 28.950 1.960  
 □ 232.500  
 ◇ 225.000

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI .000

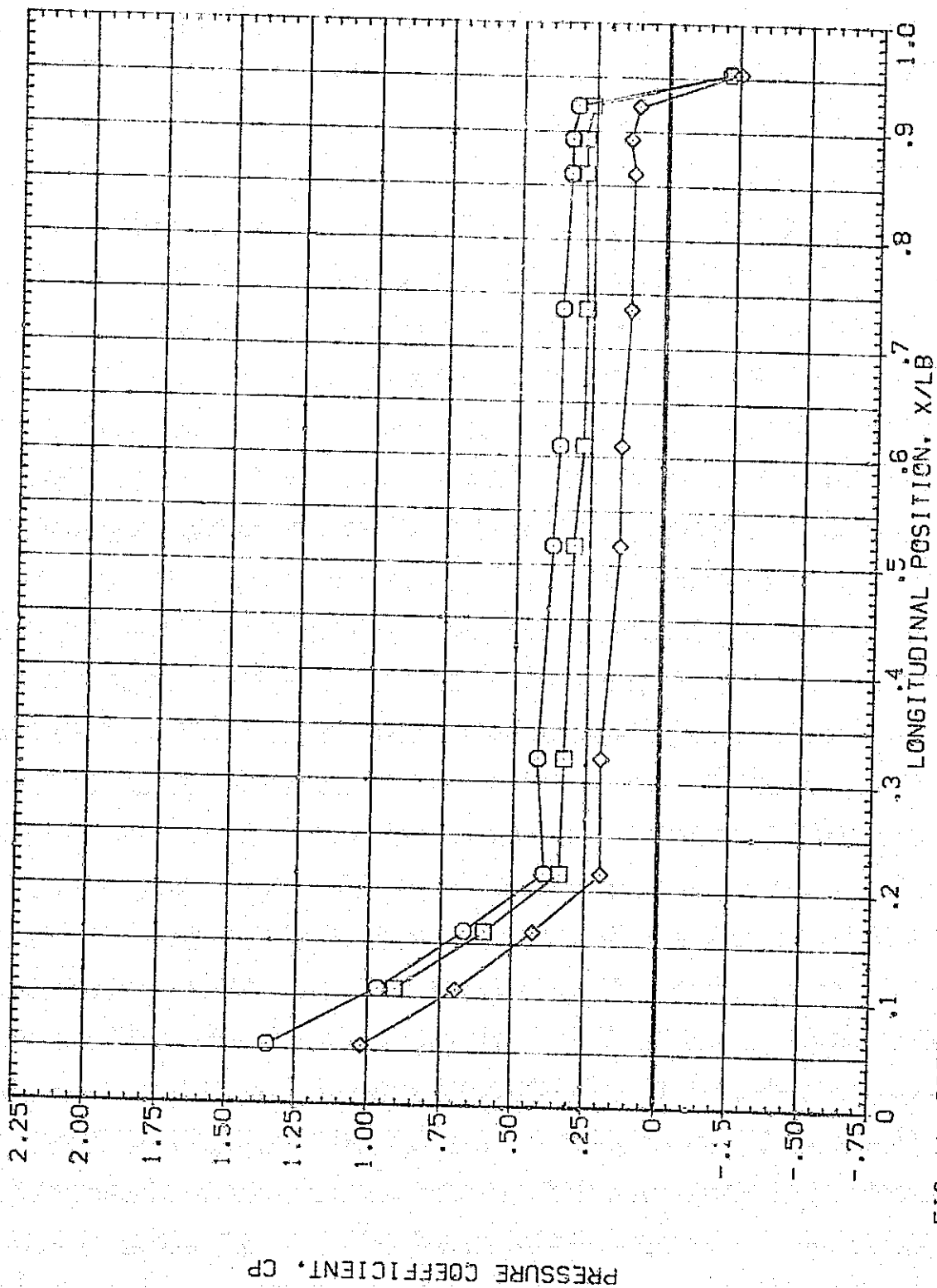


FIG. 4 PRESSURE DISTRIBUTION OVER ET - 11 MODEL WITH PROTUBERANCES



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A010)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	28.950	1.960	.000	1.000	.000
□	270.000					
◇	292.500					

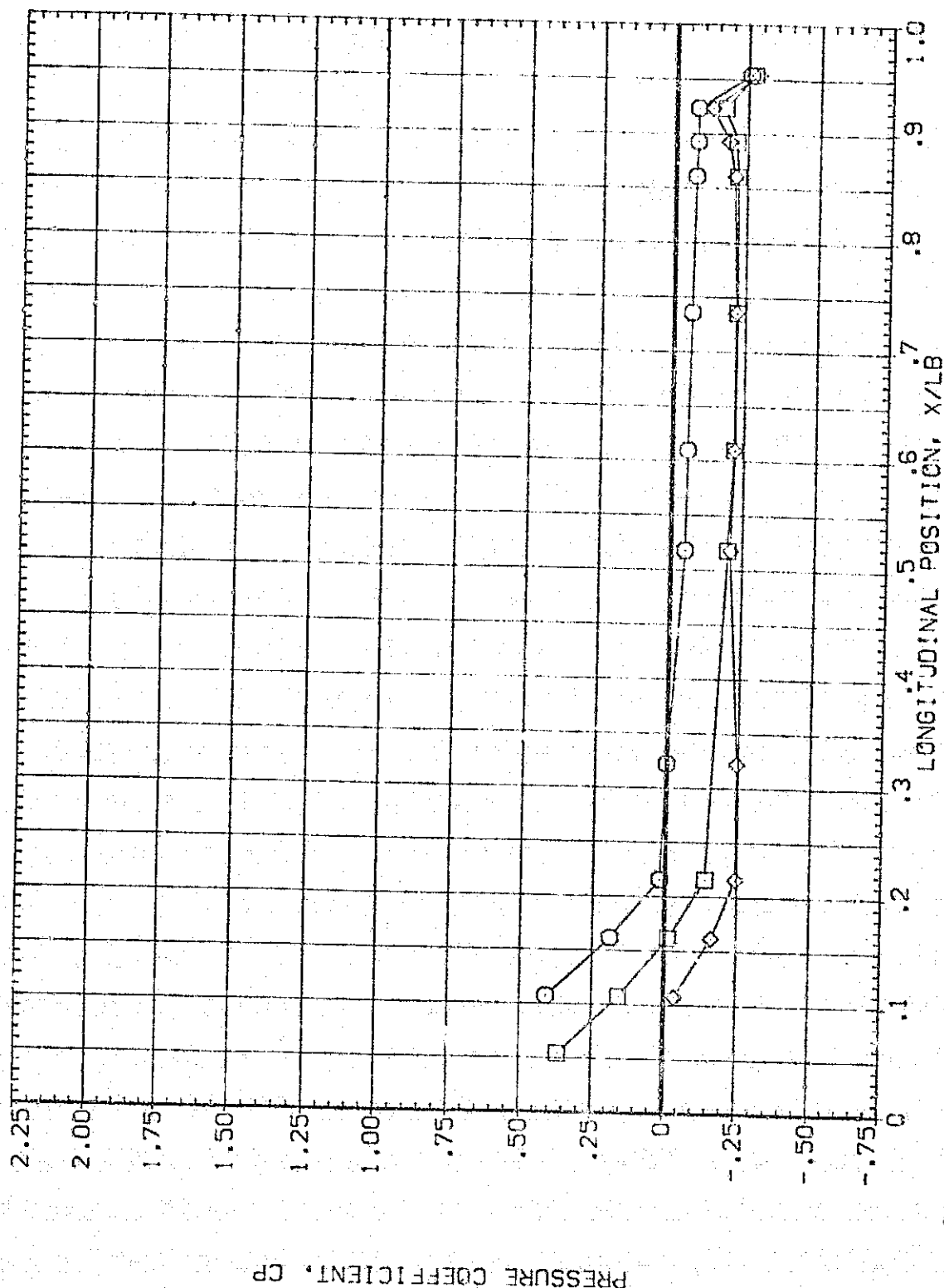


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUDANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA010)

SYMBOL  
 ○ □ ◇

THETA 315.000  
 326.000  
 346.000

ALPHA 28.550

MACH 1.960

BETA .000  
 MOUNT 1.000

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 PH1 .000

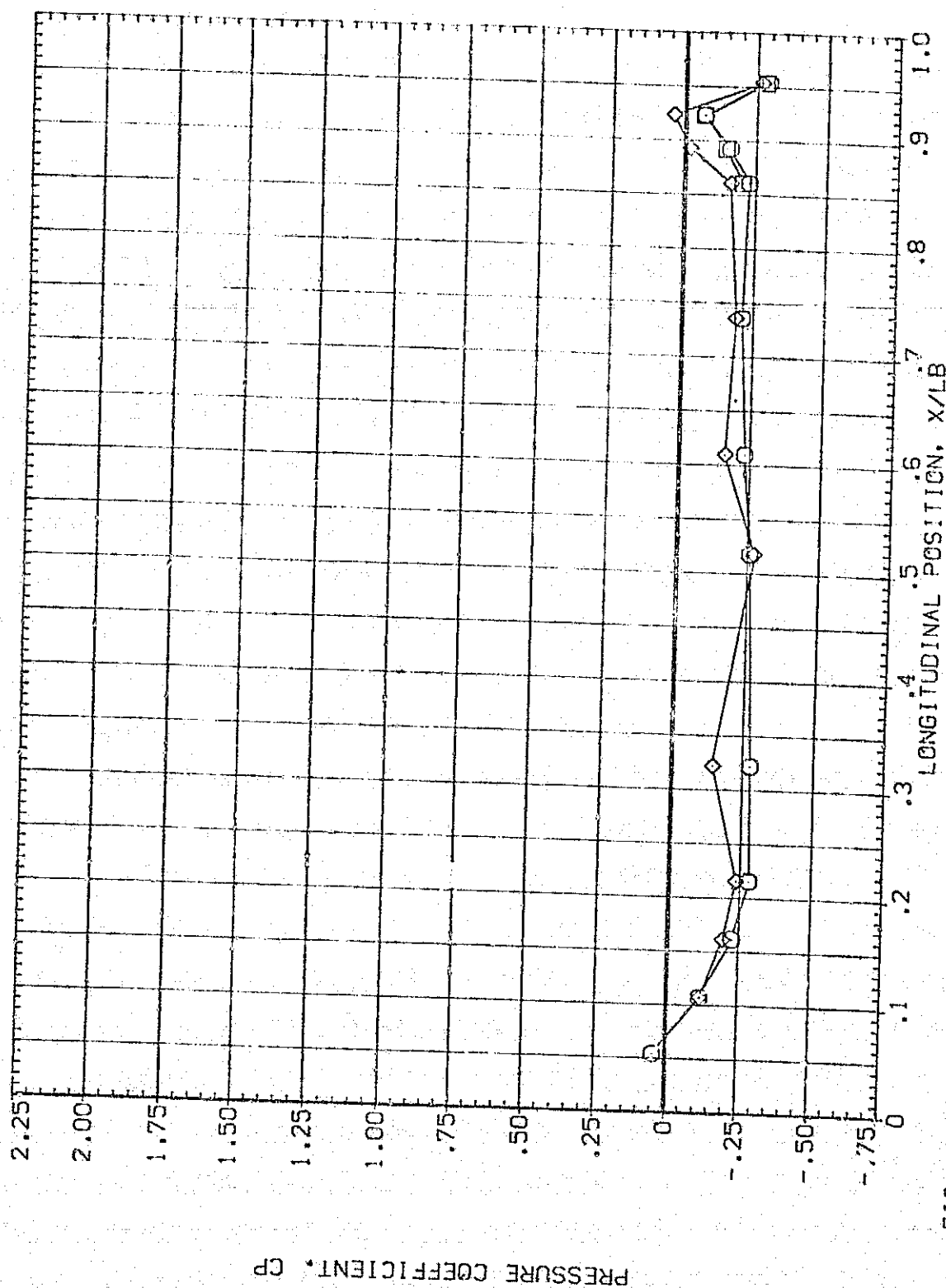


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSEC 598 (TA-2F) MCRO200 EXTERNAL TANK, TH

THETA	ALPHA	MACH
.000	-8.380	1.960
14.000		
24.000		

PARAMETRIC VALUES	
BETA	.000
AMOUNT	1.000
	PHI

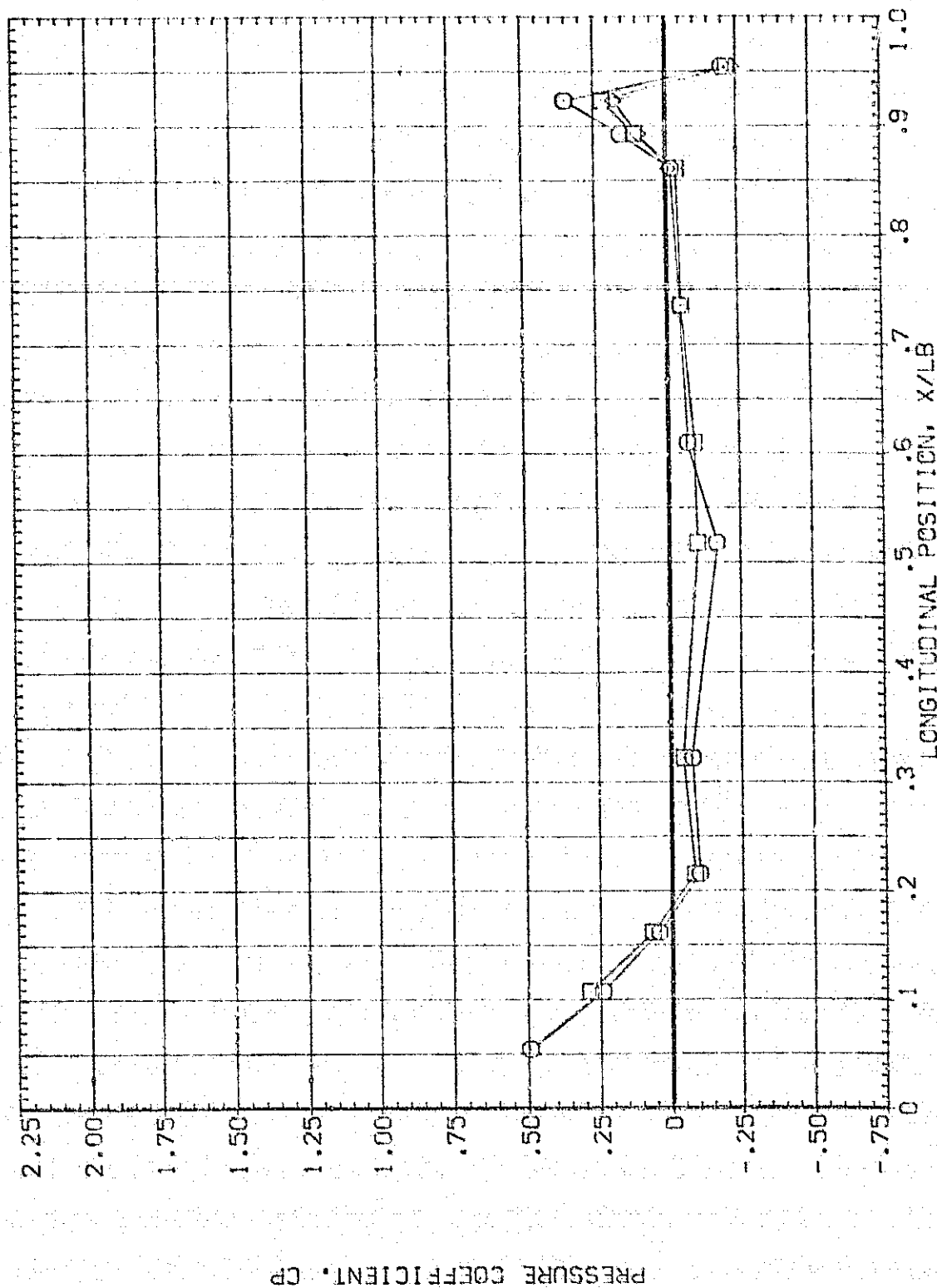


FIG. 4. PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH DOCTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIAD11)

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	45.000	-8.380	1.960	0.000	OFFSET
□	37.500			1.000	PHI
◇	30.000				

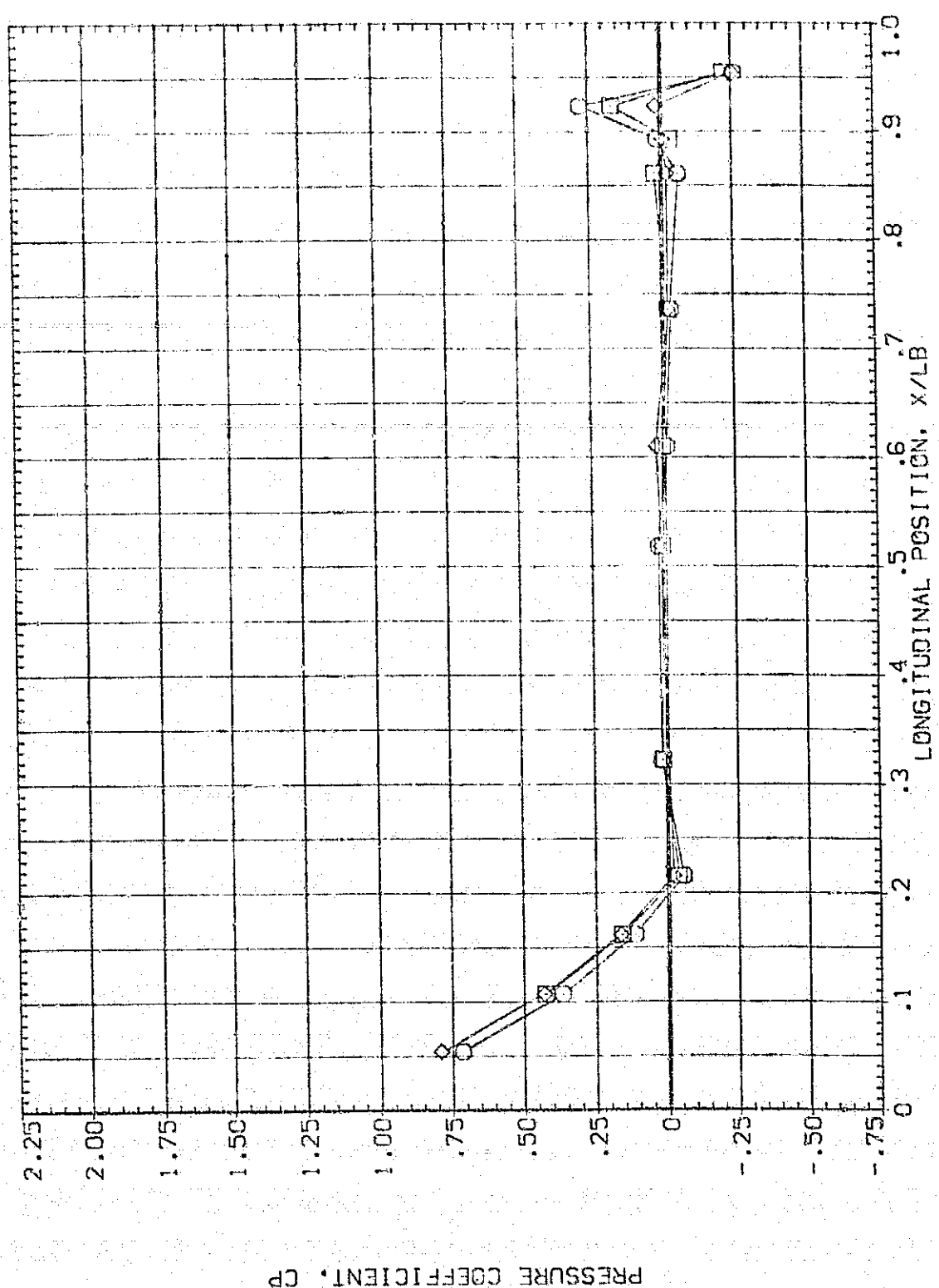


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA011)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	-8.380	1.960	.000	.000	.000
□	135.000			1.000		90.000
◇	157.500					

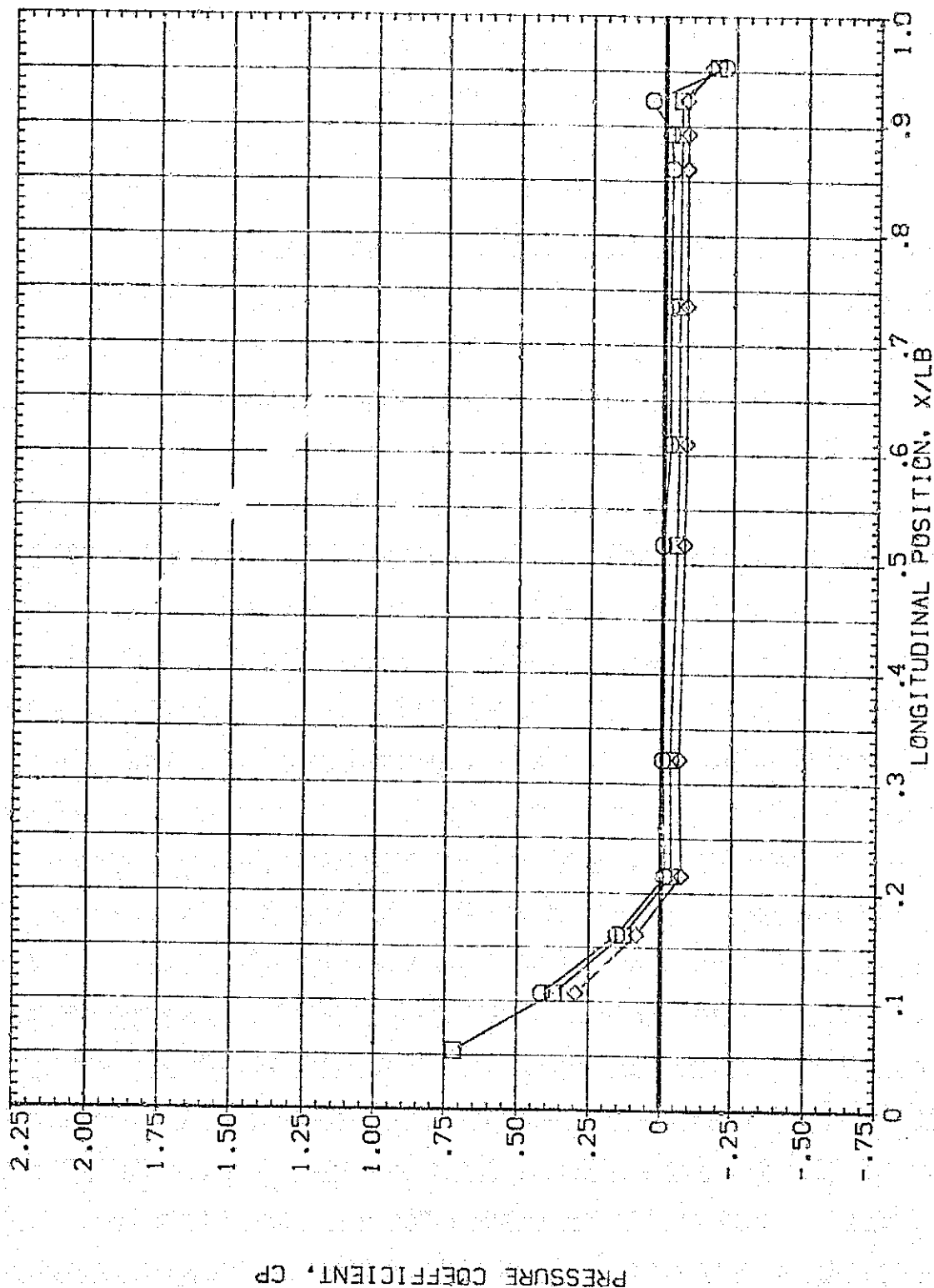


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 .000 OFFSET  
 .000 PHI  
 90.000

THETA ALPHA MACH  
 190.000 -8.380 1.980  
 232.500  
 225.000

SYMBOL  
 □  
 ○  
 ◇

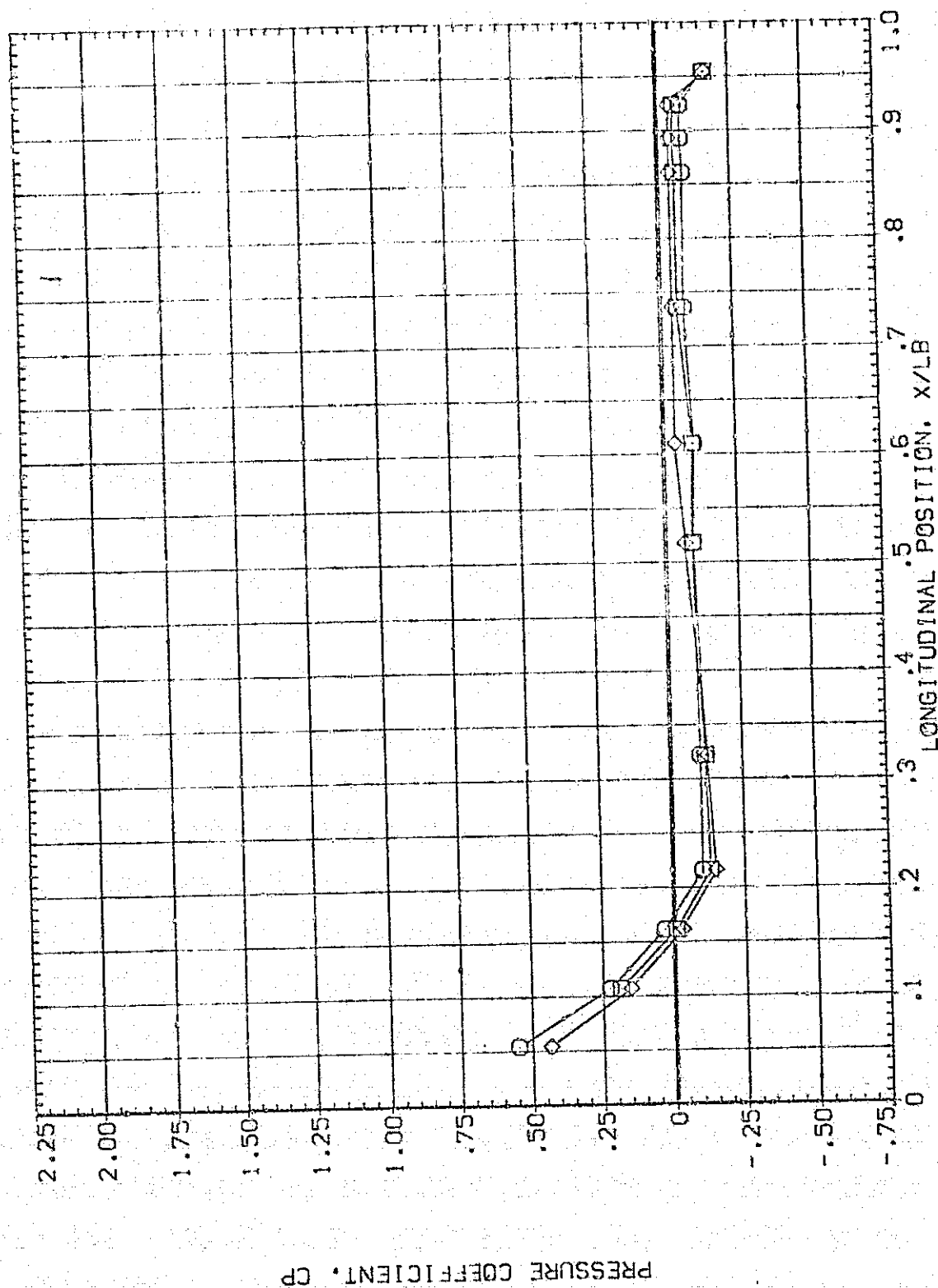


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

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MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A011)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	-8.380	1.960	MOUNT	.000	.000
□	270.000				1.000	90.000
◇	232.500					

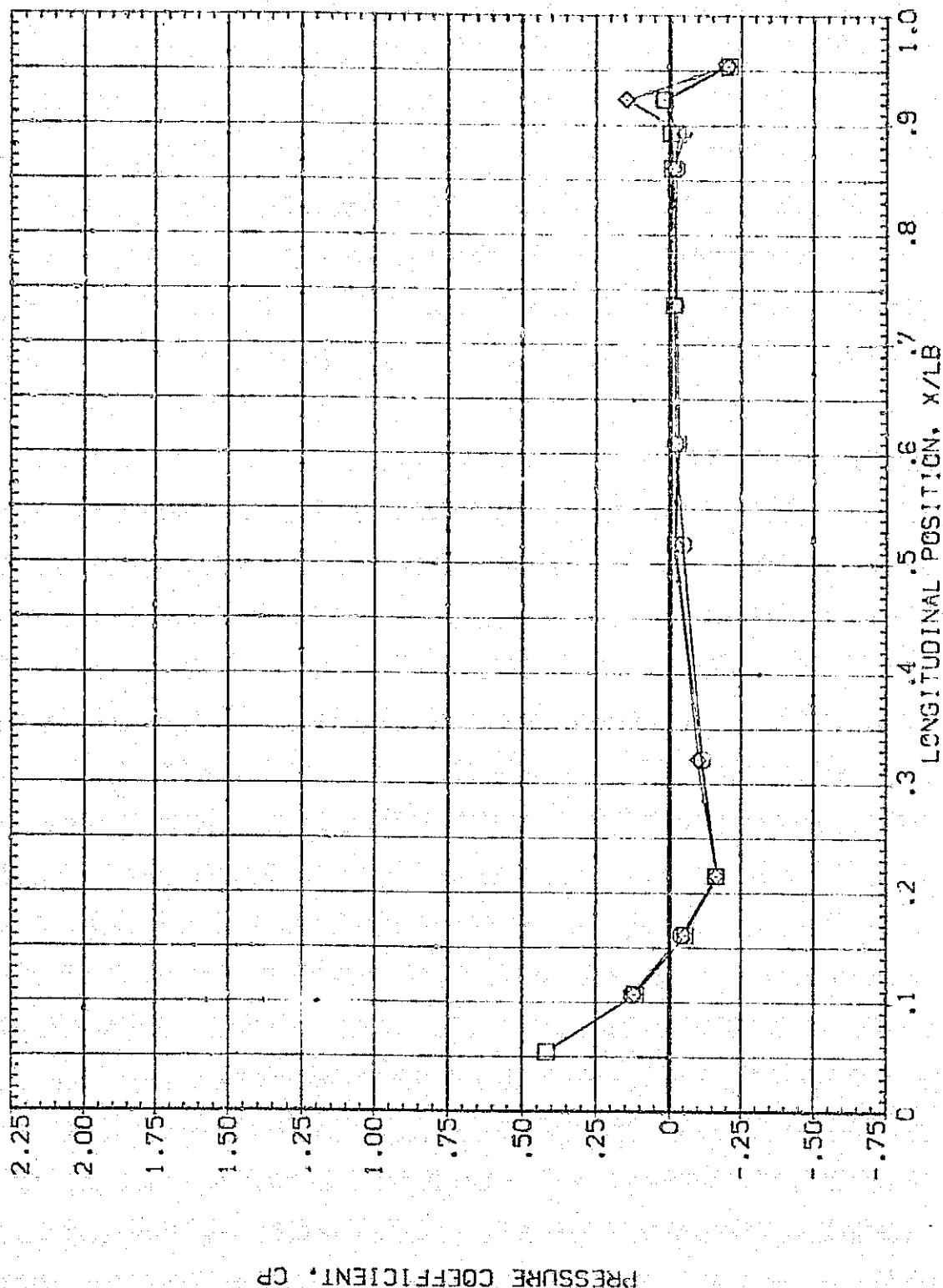


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 O 315.000 -8.380 1.960  
 □ 326.000  
 ◇ 346.000

PARAMETRIC VALUES  
 BETA .000  
 HOURS 1.000  
 OFFSET PHI .000  
 90.000

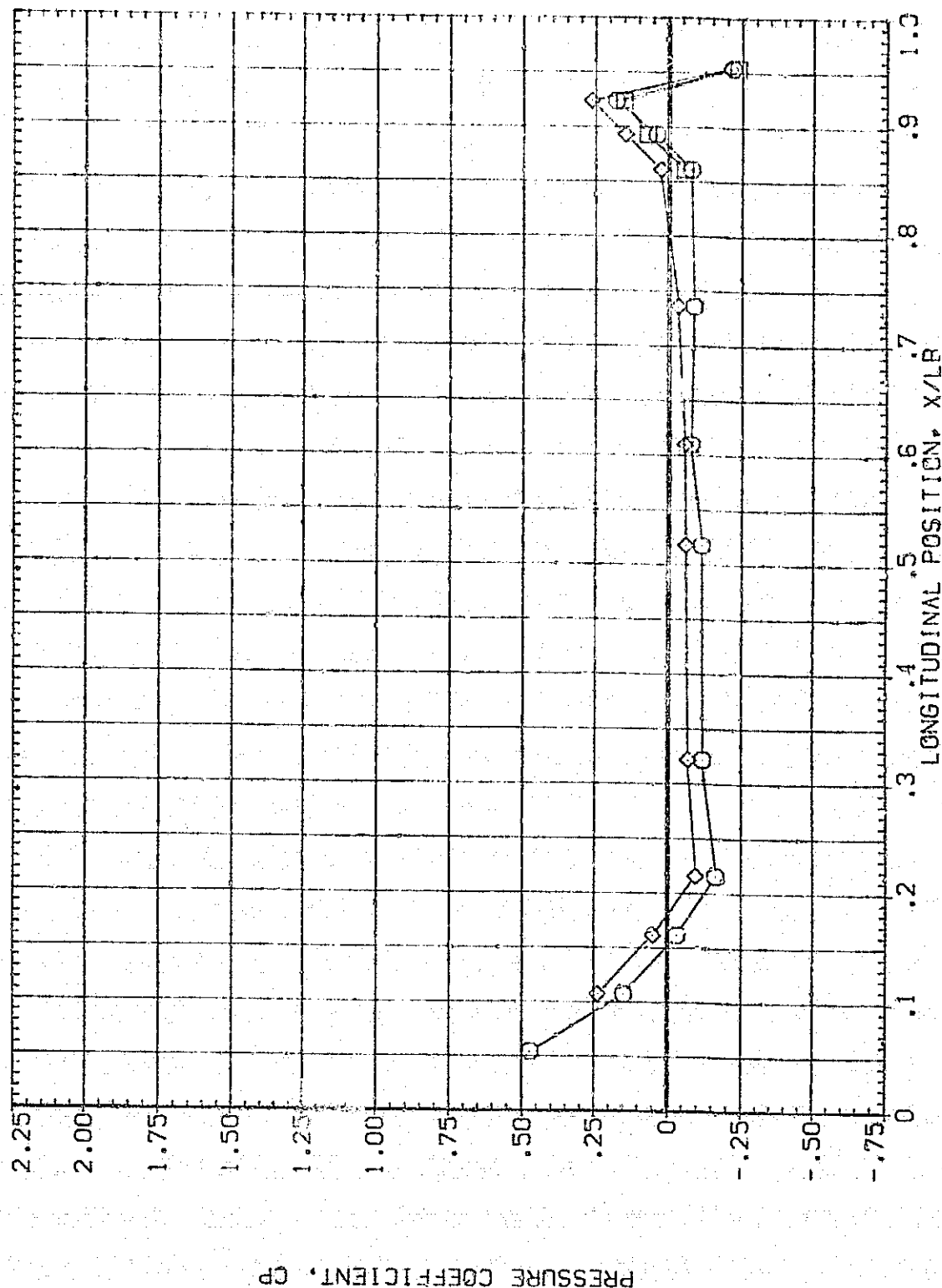


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA012)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFF-SET	PHI
○	.000	-4.330	1.950	.000	.000	.000
□	14.000			1.000		
◇	24.000					90.000

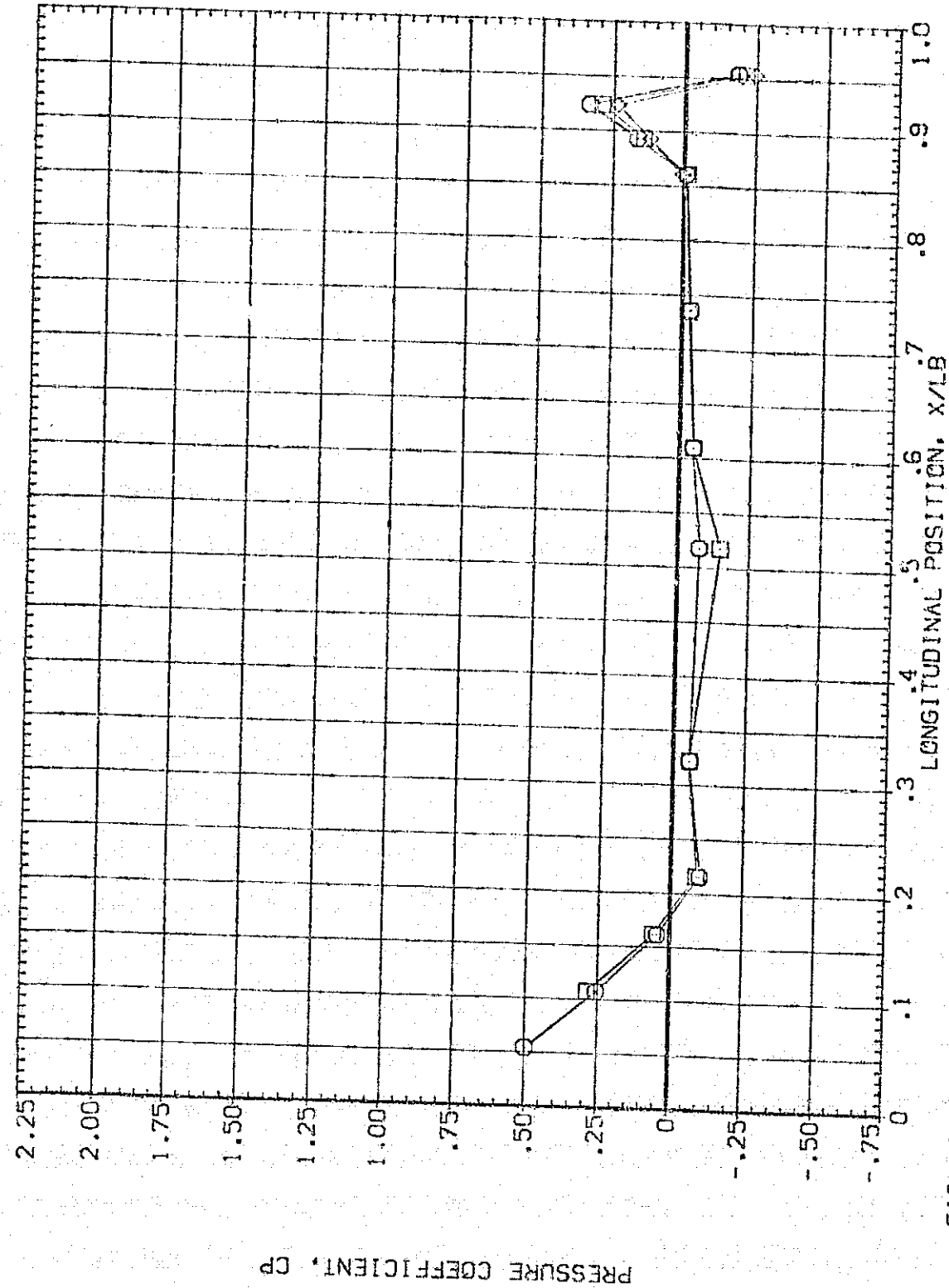


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	45.000	-4.330	1.960	MCOUNT	.000 OFFSET .000
□	57.500				1.000 PHI 90.000
◇	90.000				

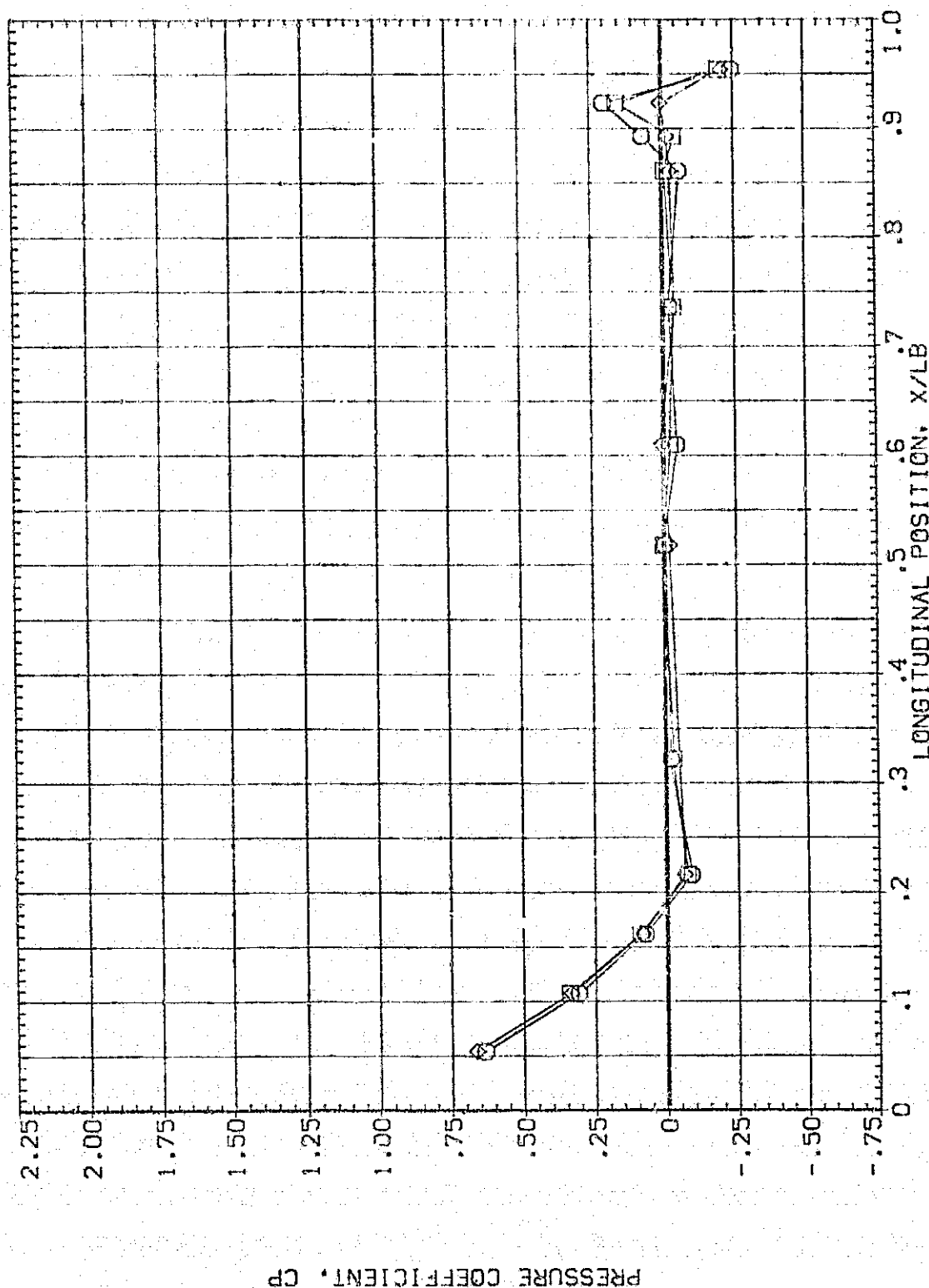


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA012)

SYMBOL	THETA	ALPHA	MACH
○	112.500	-4.330	1.860
□	135.000		
◇	157.500		

PARAMETRIC VALUES		
BETA	OFFSET	PHI
0.000	1.000	90.000

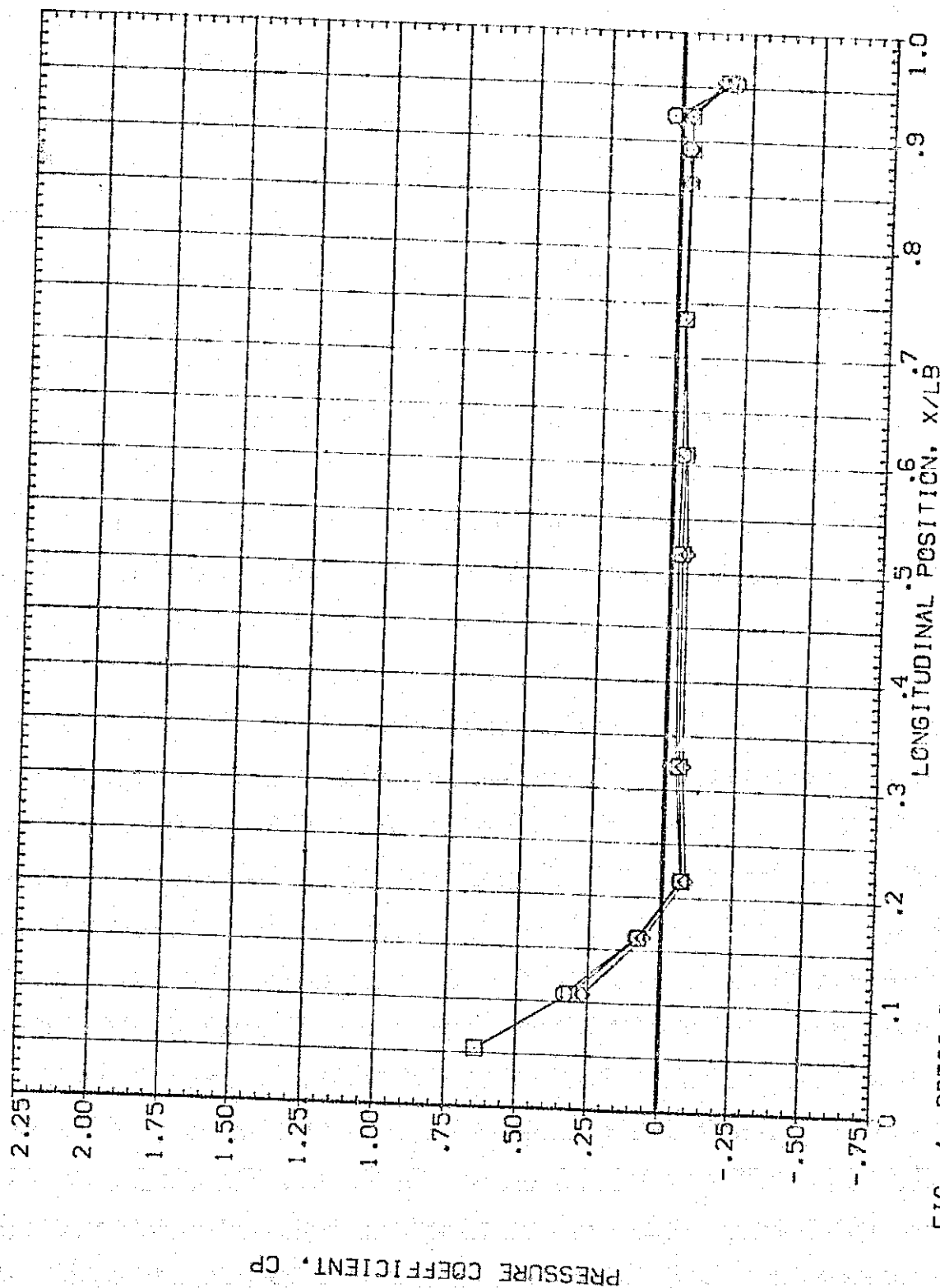


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 130.000  
 232.500  
 225.000

ALPHA  
 -4.330

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 90.000  
 PHI

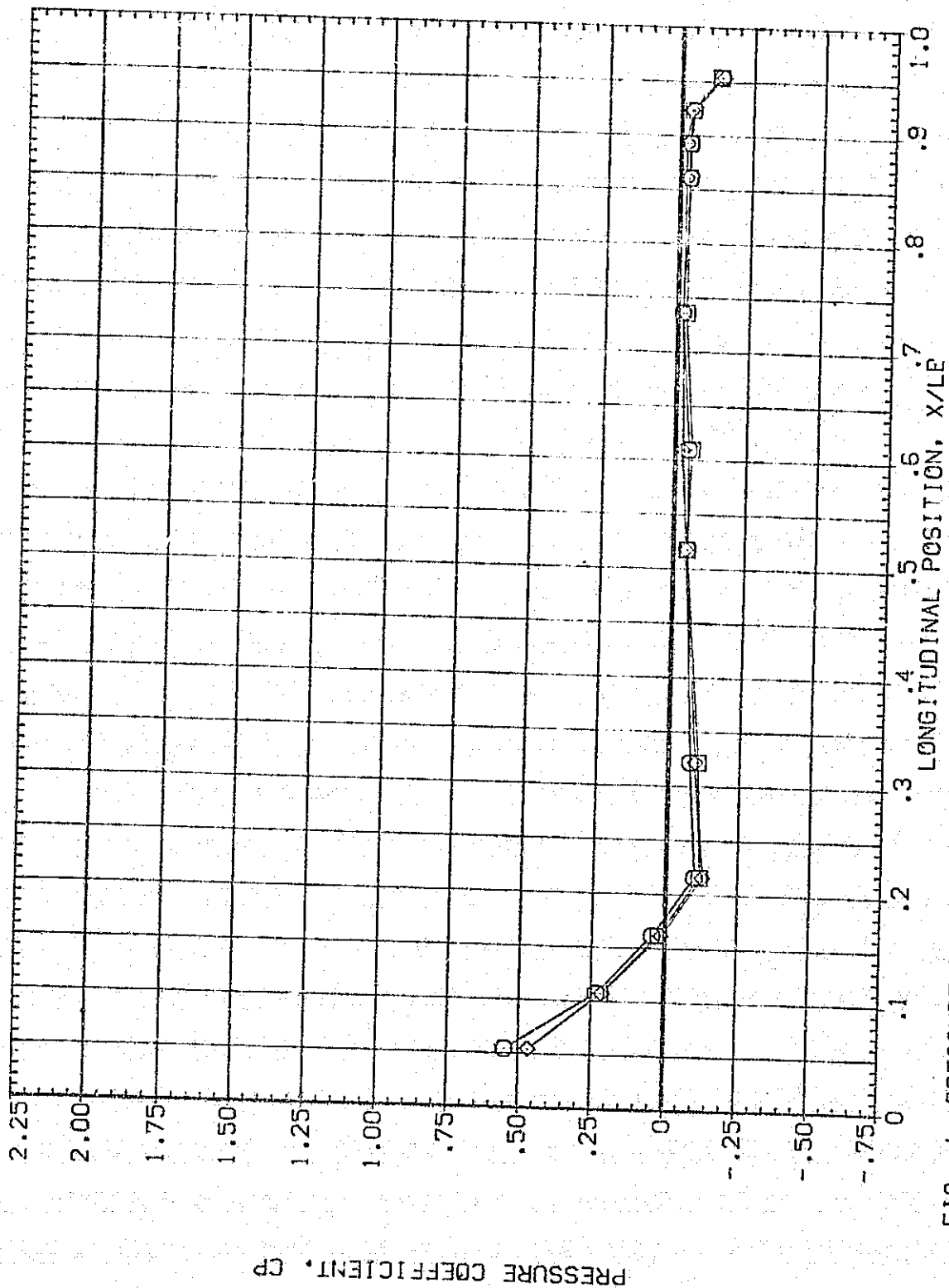


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA012)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	247.500	-4.330	1.980	.000	.000	.000
◇	270.000			1.000		90.000
◇	292.500					

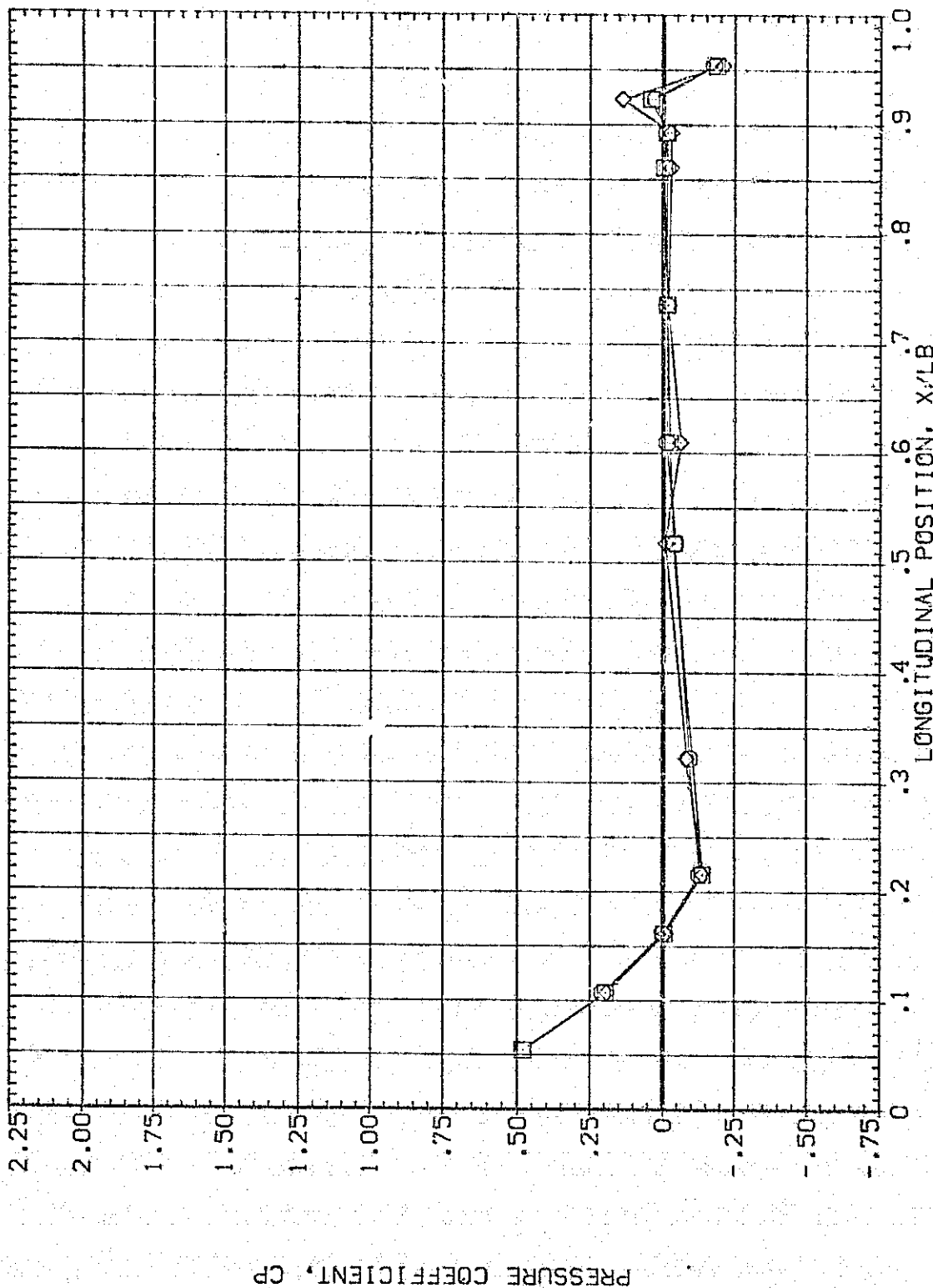


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	-4.330	1.960	.000	OFFSET
□	325.000			1.000	PHI
◇	345.000				

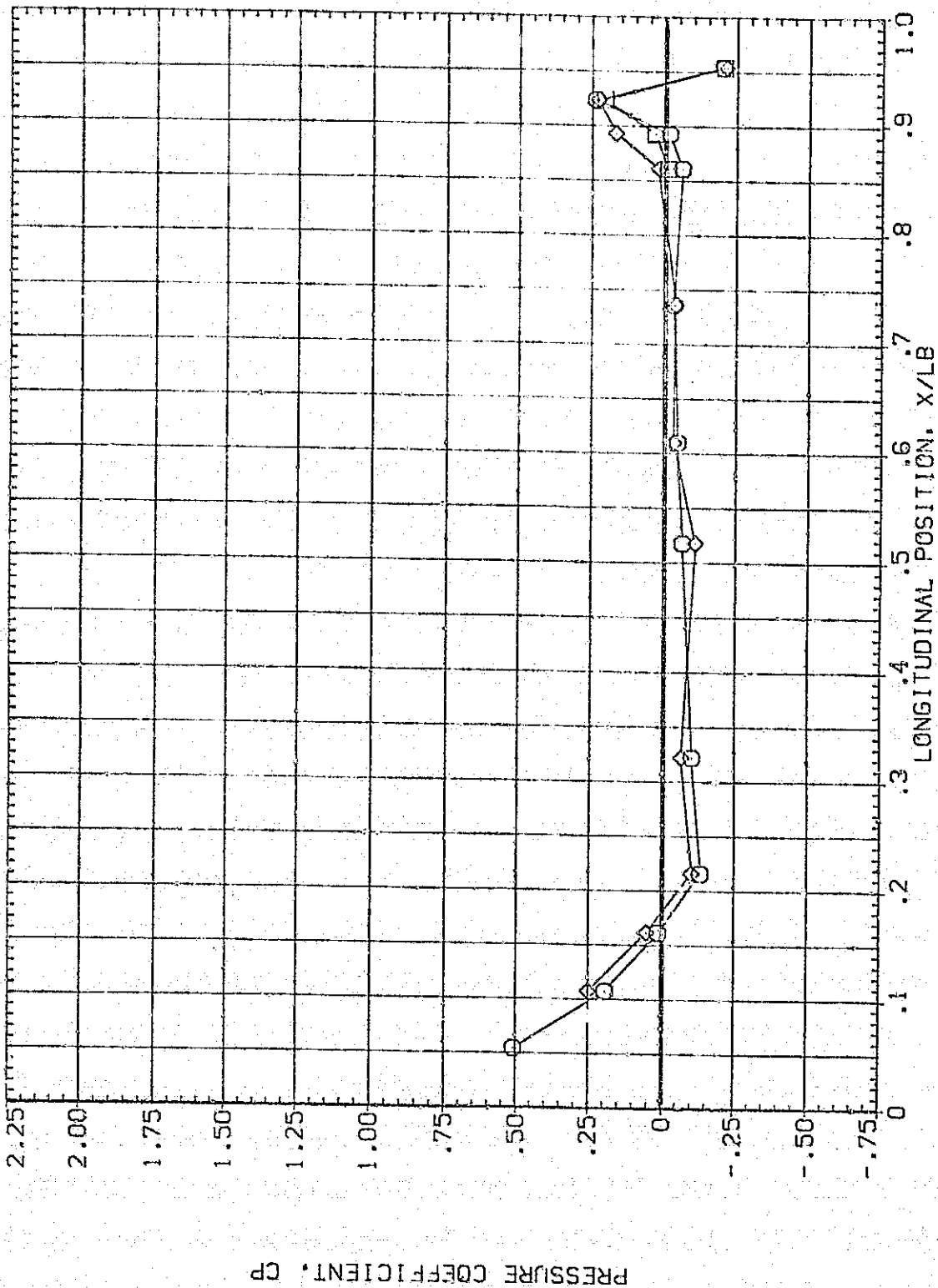


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA013)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BEYA	OFFSET	PHI
○	.000	-.290	1.970	.000	.000	.000
□	14.000			1.000		
◇	24.000					90.000

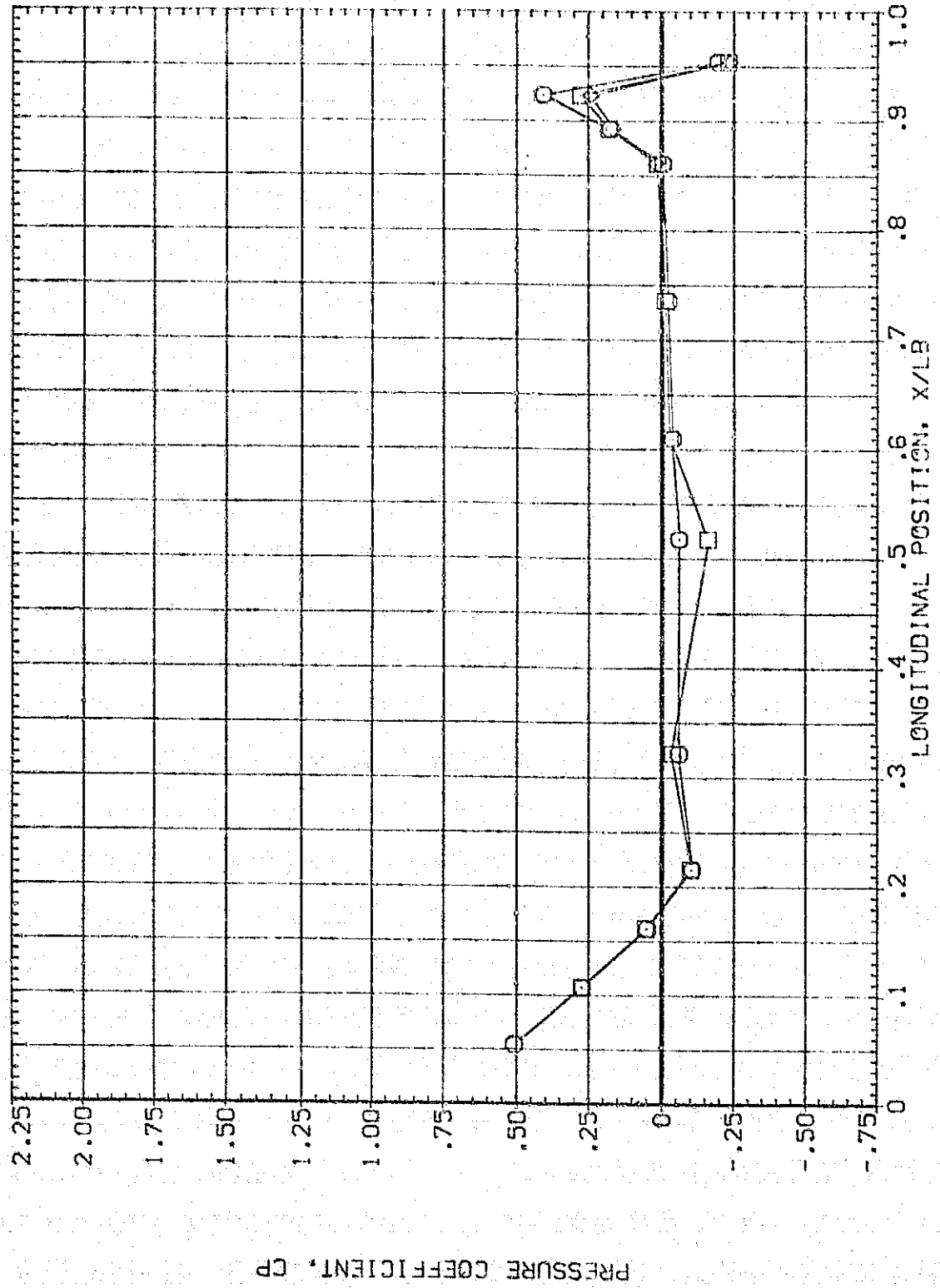


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 45.000  
 37.500  
 90.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PH1 .000  
 90.000

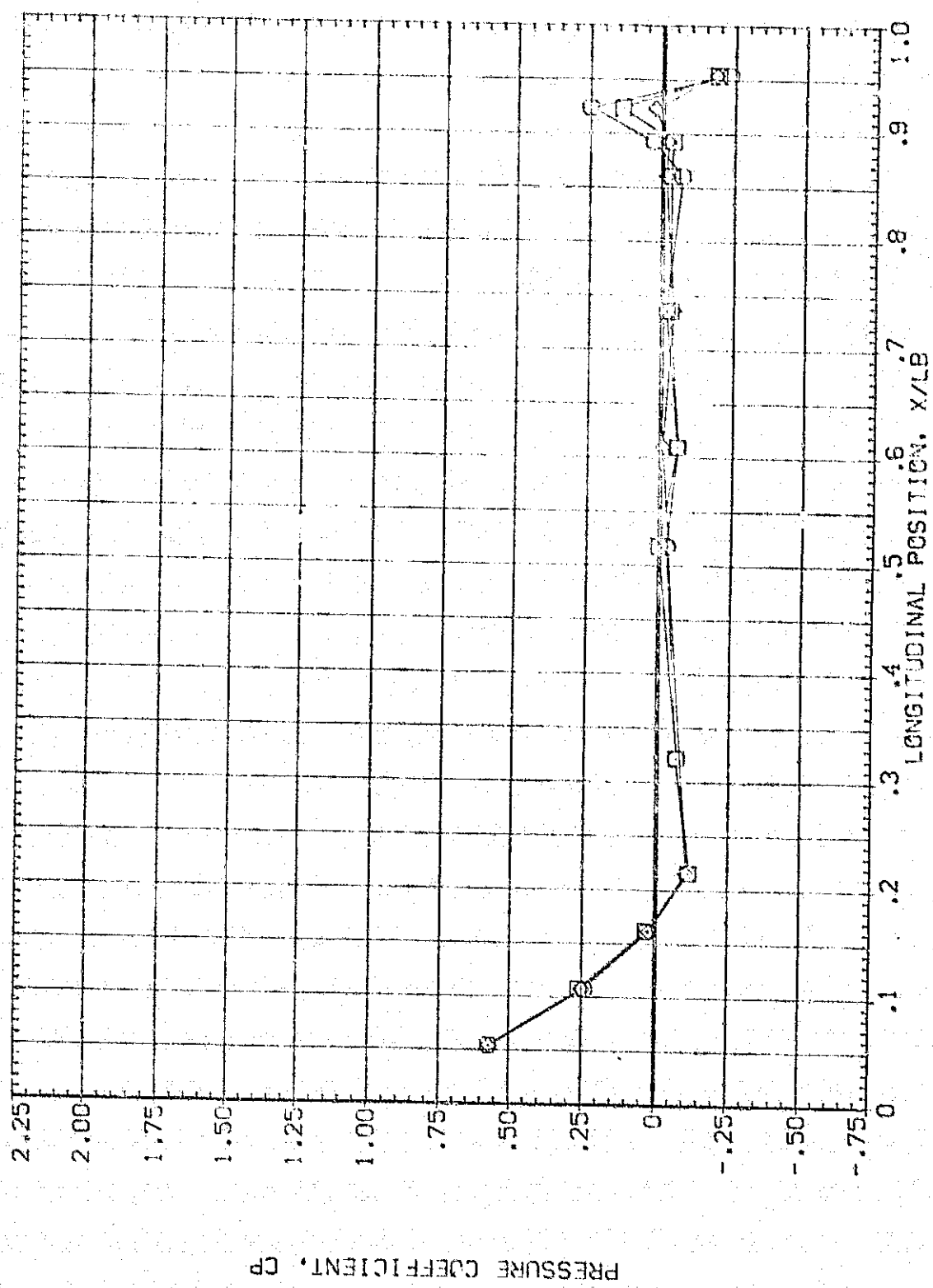


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A013)

PARAMETRIC VALUES  
 .000 OFFSET  
 .000 PHI  
 90.000

BEYA  
 MOUNT

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 -.260

MACH  
 1.970

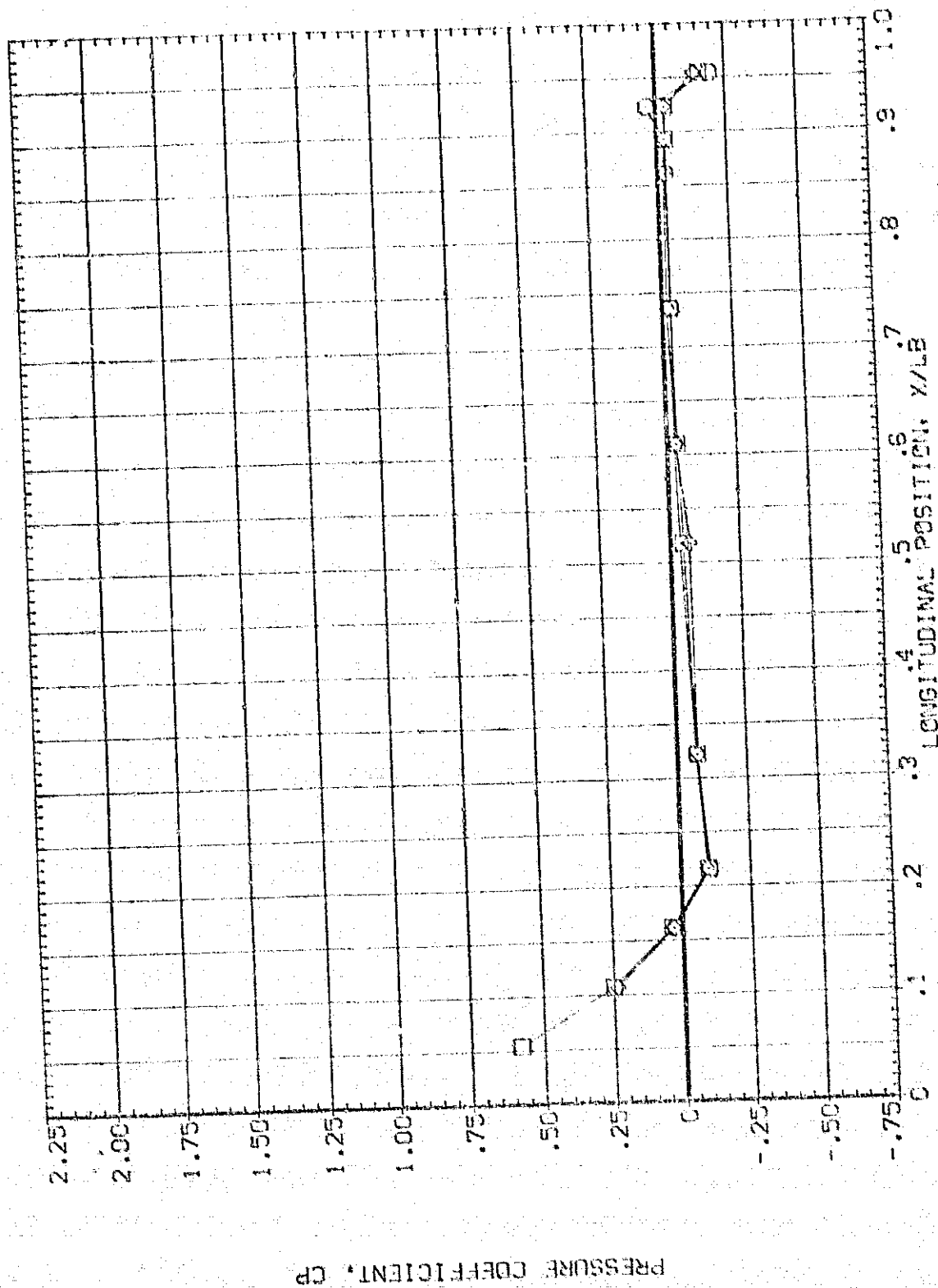


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 □  
 ◇

THETA  
 130.000  
 232.500  
 225.000

ALPHA  
 -.280

MACH  
 1.970

PARAMETRIC VALUES  
 BETA  
 MOUNT  
 .000  
 1.000  
 .000  
 PH1  
 90.000

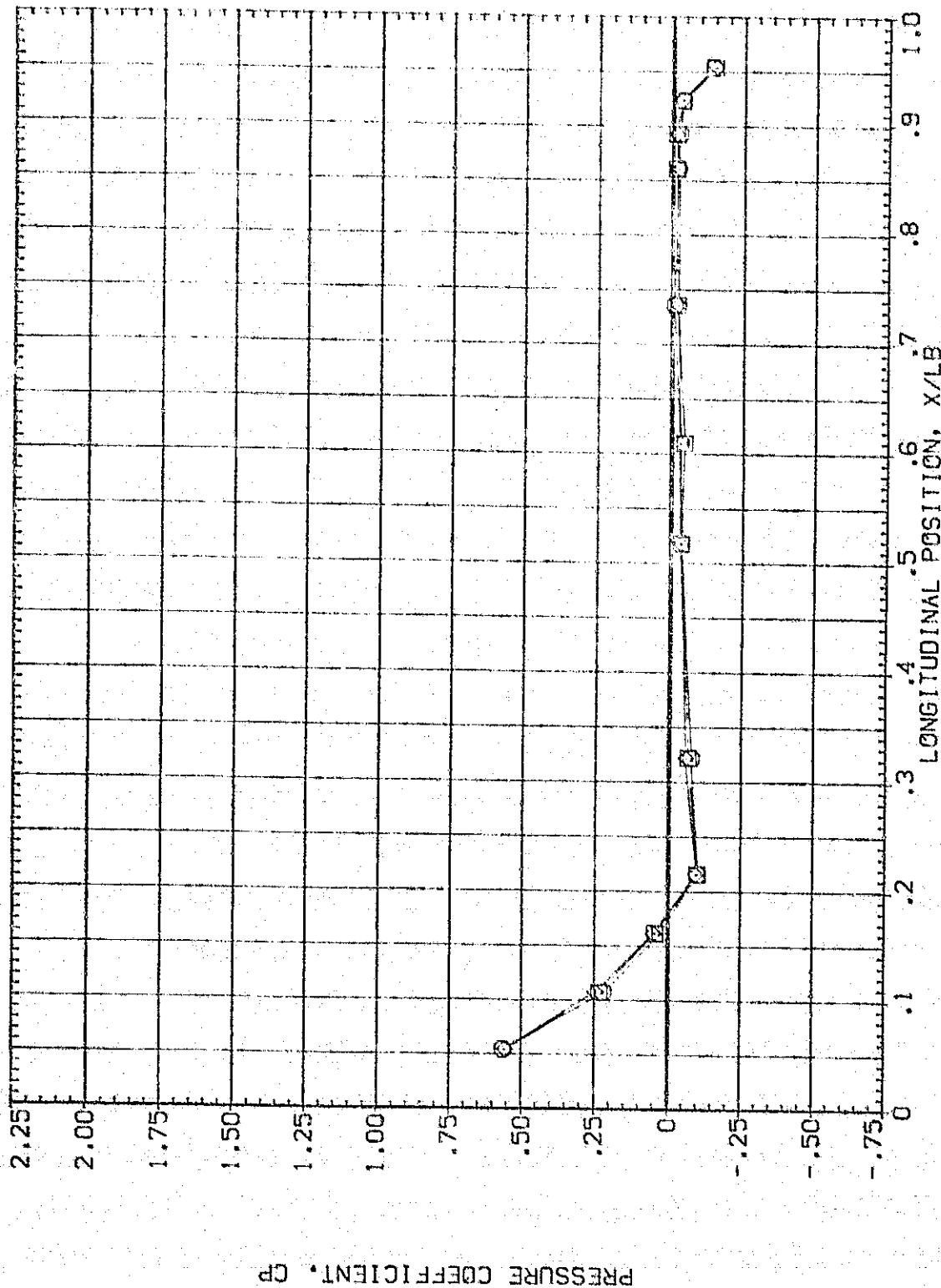


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA013)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	.000
□	247.500	-.280	1.970	1.000	PHI	90.000
◇	270.000					
◇	292.500					

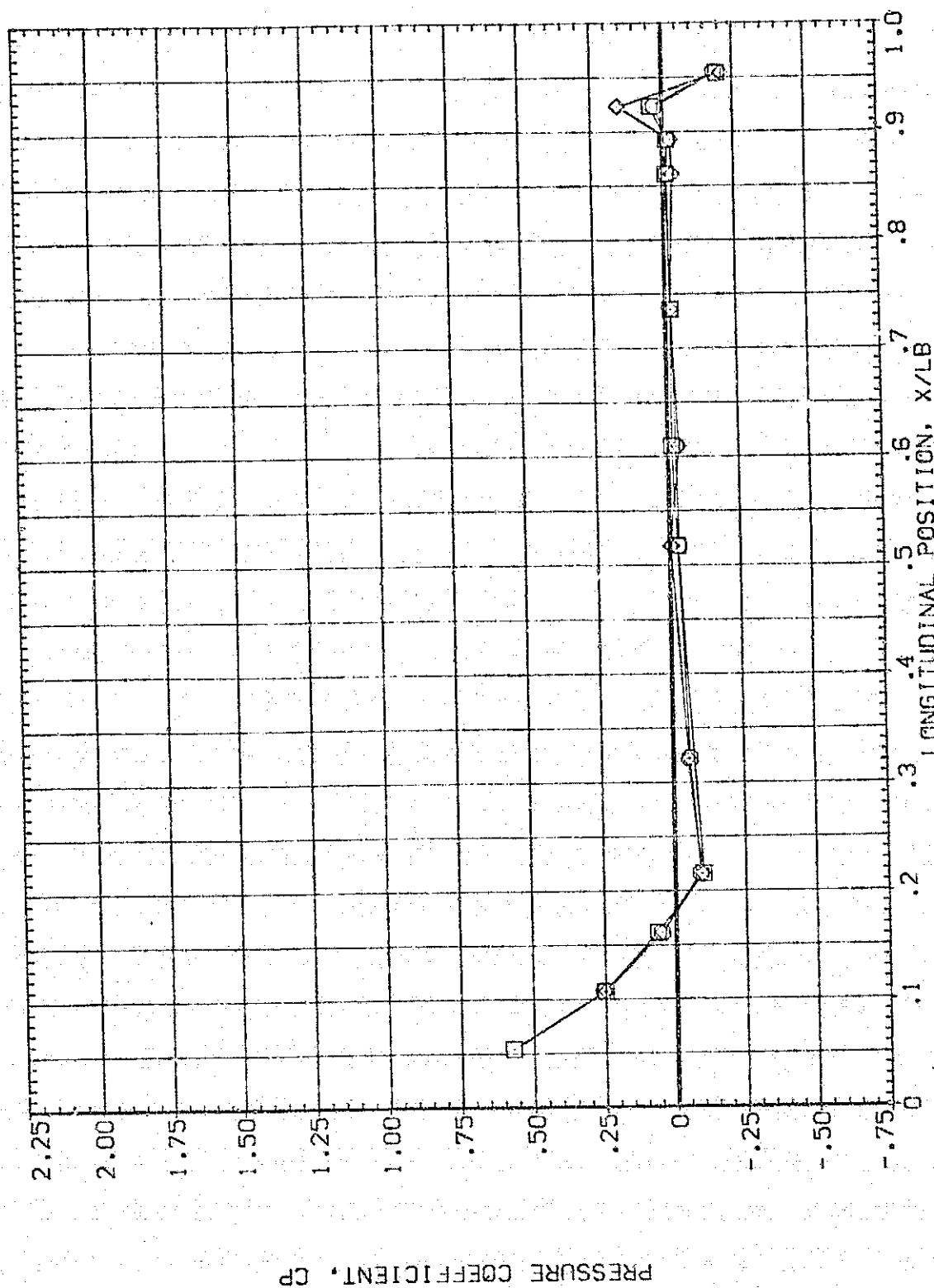


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
-.280

MACH  
1.970

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI

.000  
90.000

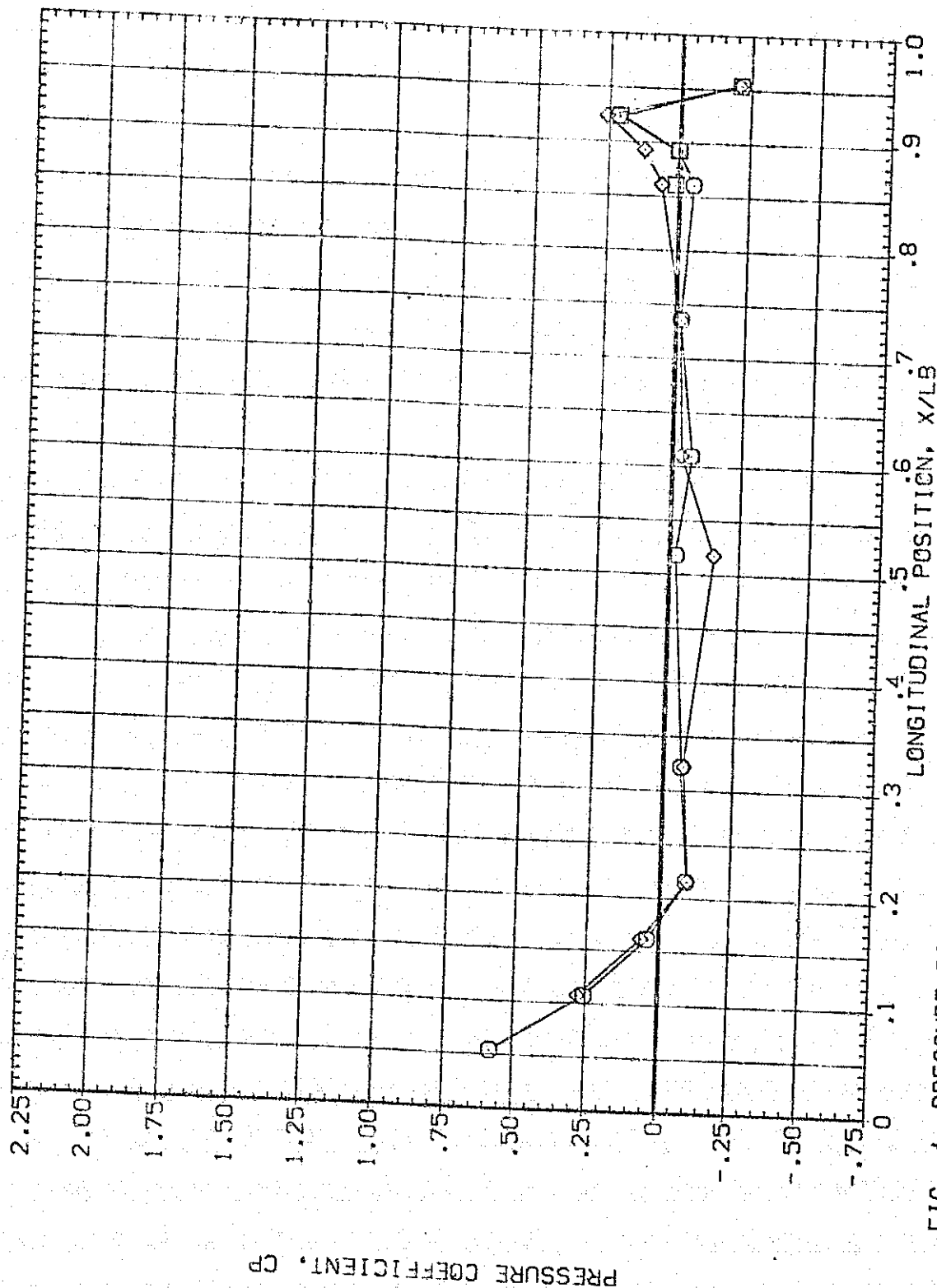


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A014)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	.000	3.790	1.960	.000	.000	.000
□	14.000			1.000		
◇	24.000					90.000

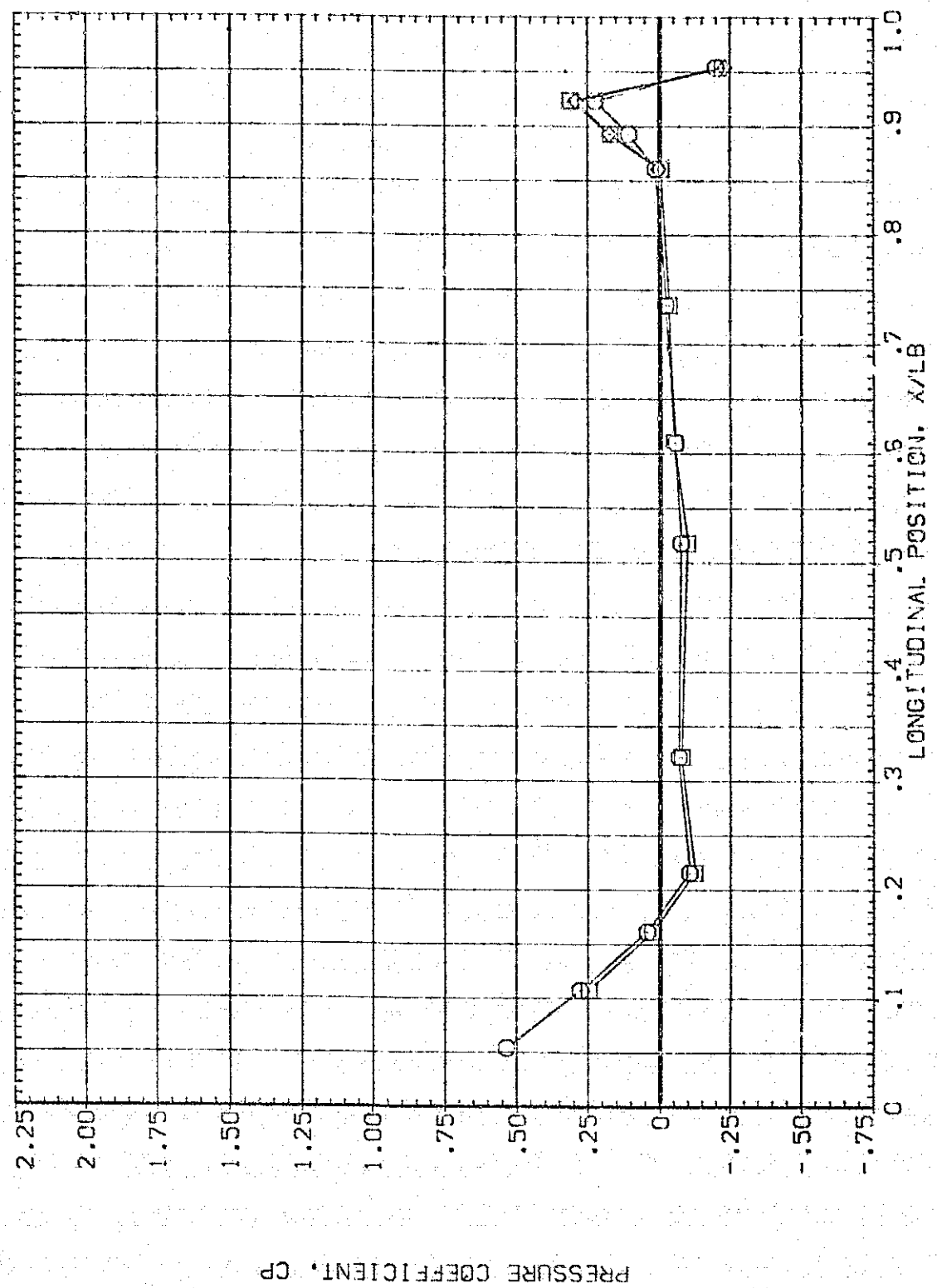


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA014)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	45.000	3.790	1.960	.000	.000	.000
□	57.500			1.000		
◇	90.000					90.000

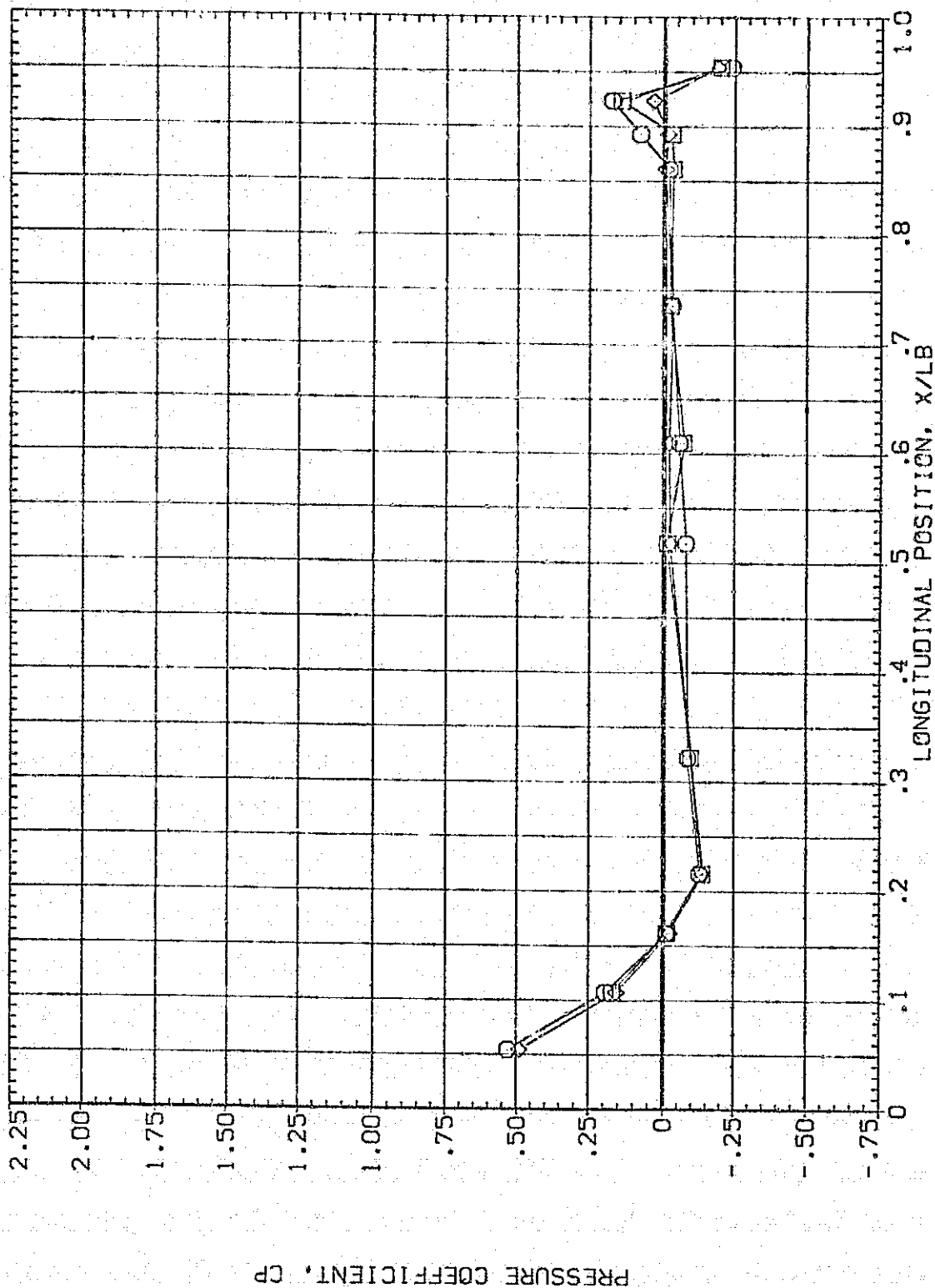


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A014)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	.000
○	112.500	3.790	1.960	1.000	P41	90.000
□	135.000					
◇	157.500					

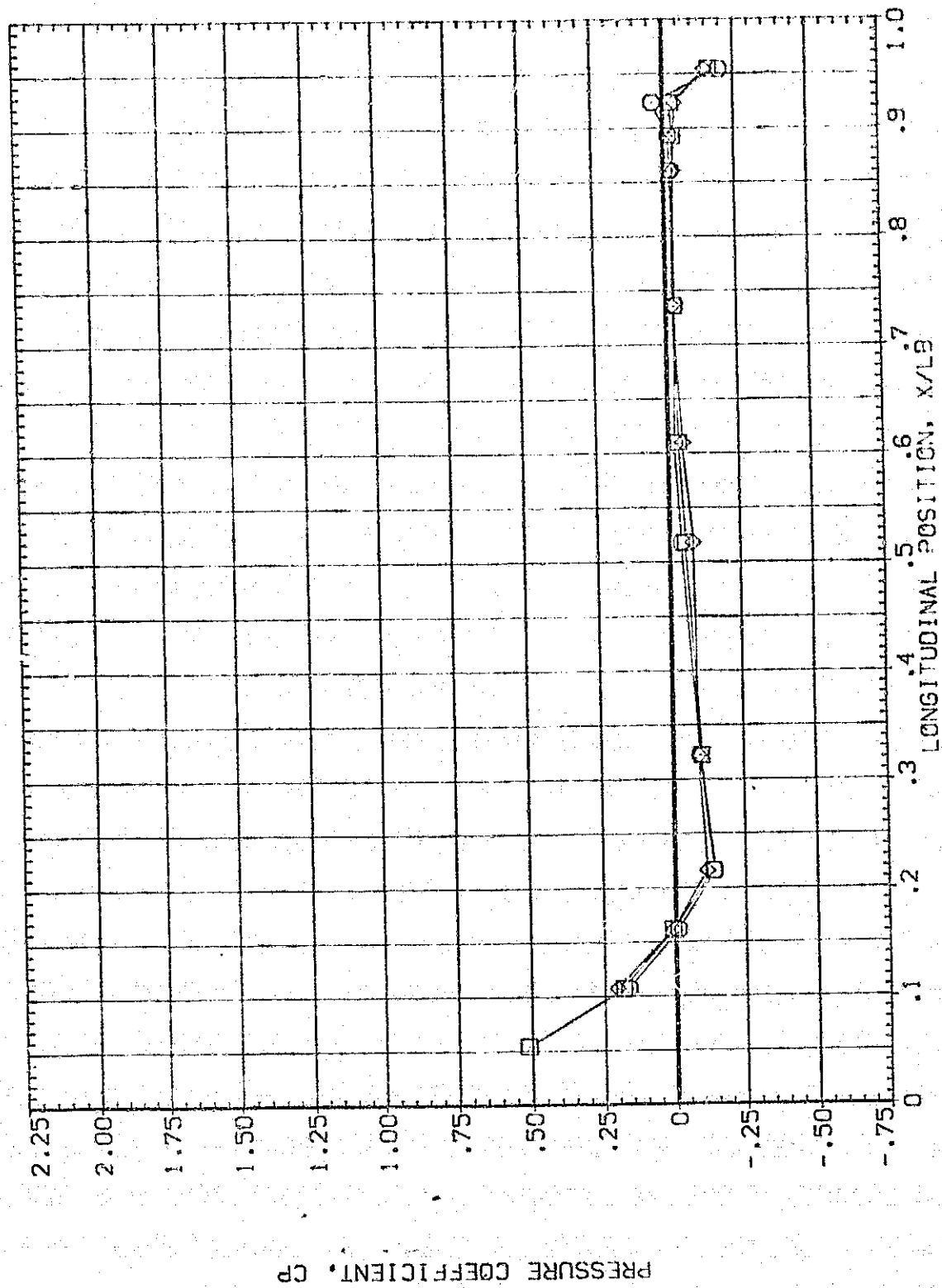


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI 99.033

THETA 190.000  
 ALPHA 3.750  
 MACH 1.960

SYMBOL  
 190.000  
 232.500  
 225.000

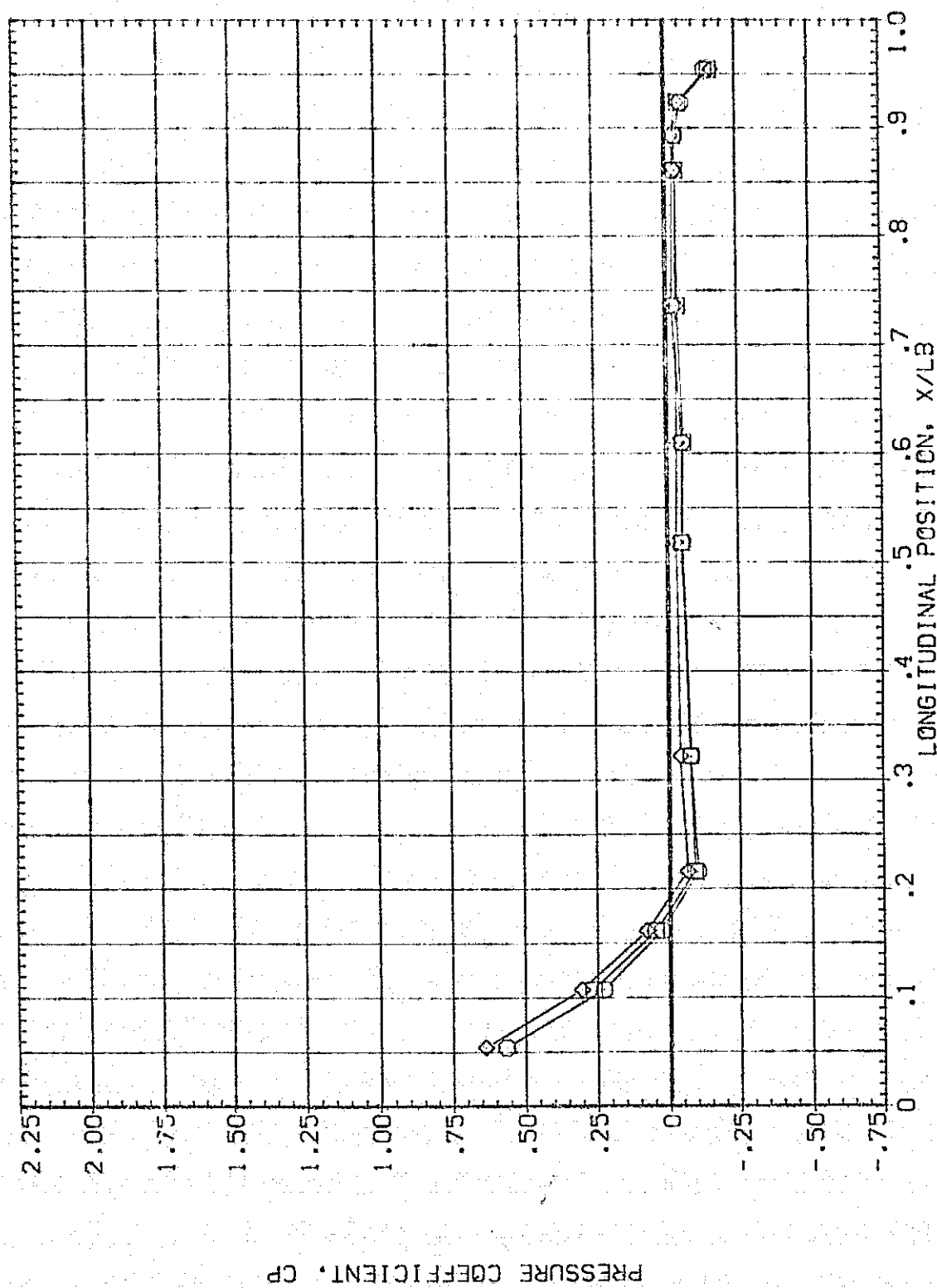


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A014)

SYMBOL    THETA    ALPHA    MACH  
 ○    247.500    3.790    1.960  
 □    270.000  
 ◇    292.500

BETA    MOUNT    PARAMETRIC VALUES  
 .000    .000    OFFSET  
 1.000    90.000    PHI

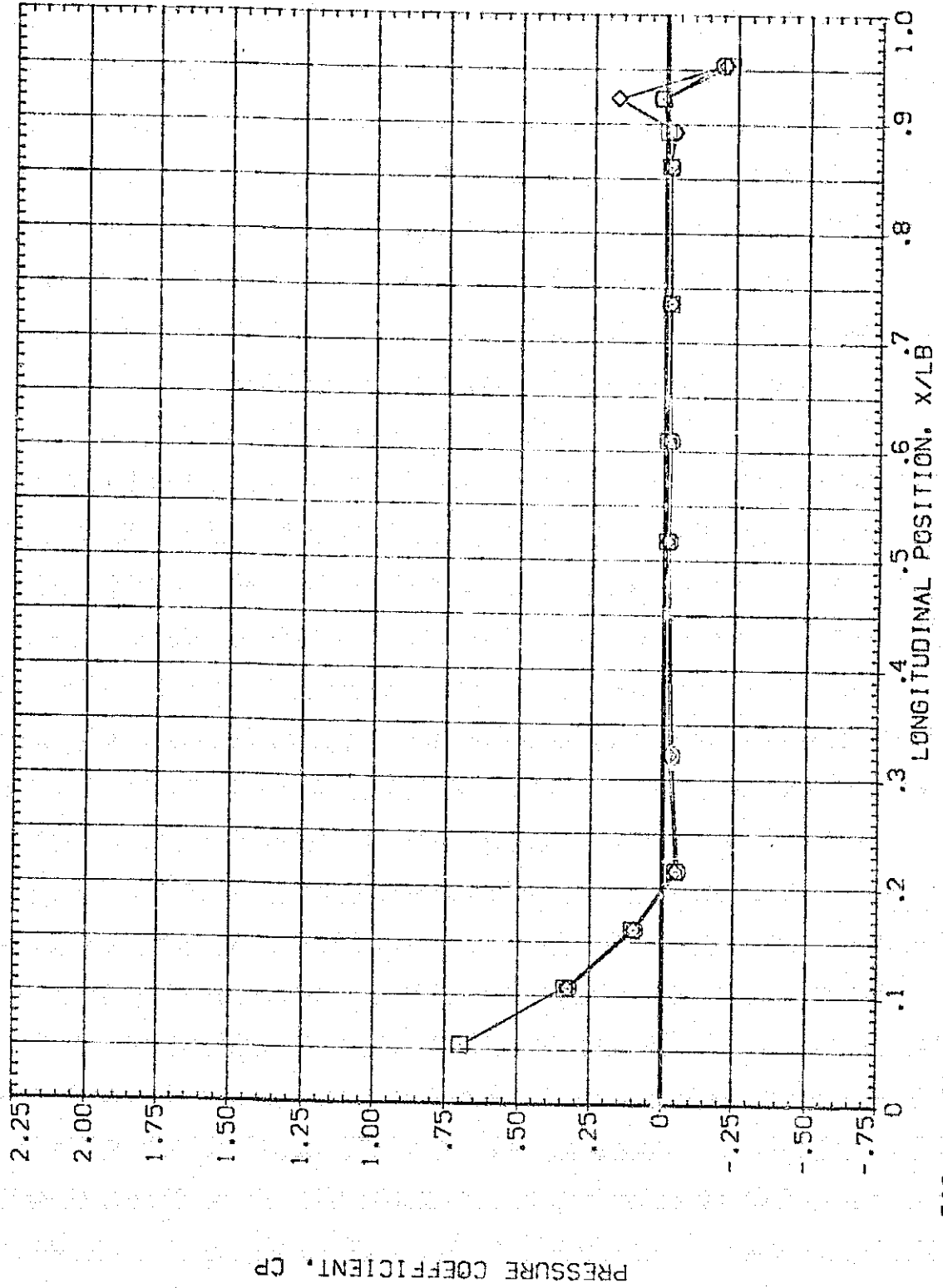


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUDANCES

SYMBOL THETA ALPHA MACH  
 O 315.000 3.790 1.360  
 □ 326.000  
 ◇ 346.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 PHI 90.000  
 OFFSET .000

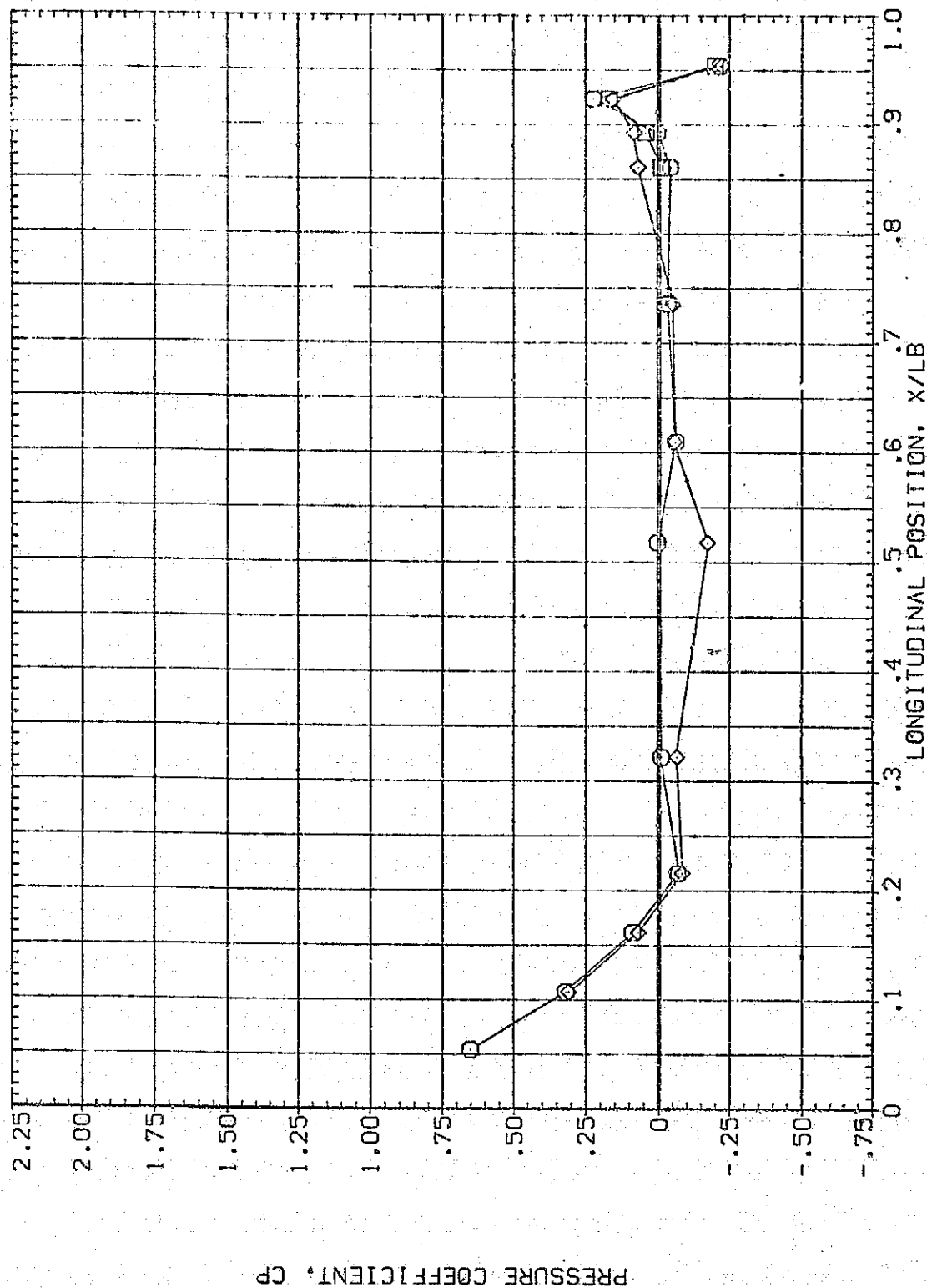


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

(P1A015)

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

PARAMETRIC VALUES

.000  
90.000

OFFSET  
PHI

.000  
1.000

BETA  
MOUNT

SYMBOL  
◇ □

THETA  
.000  
14.000  
24.000

ALPHA  
7.840

MACH  
1.960

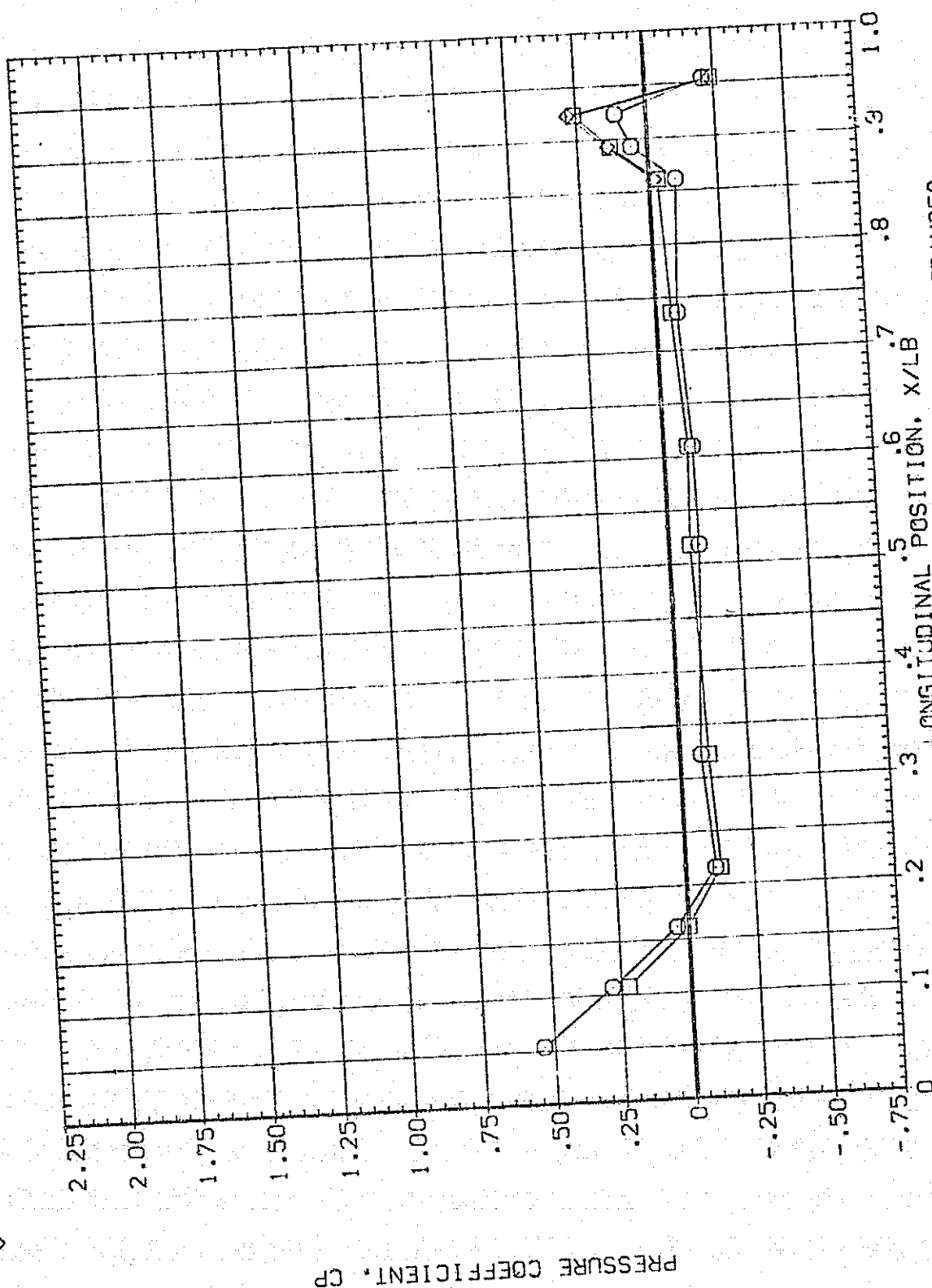


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	45.000	7.840	1.960	.000	.000
□	57.500			1.000	OFFSET
◇	90.000			PHI	90.000

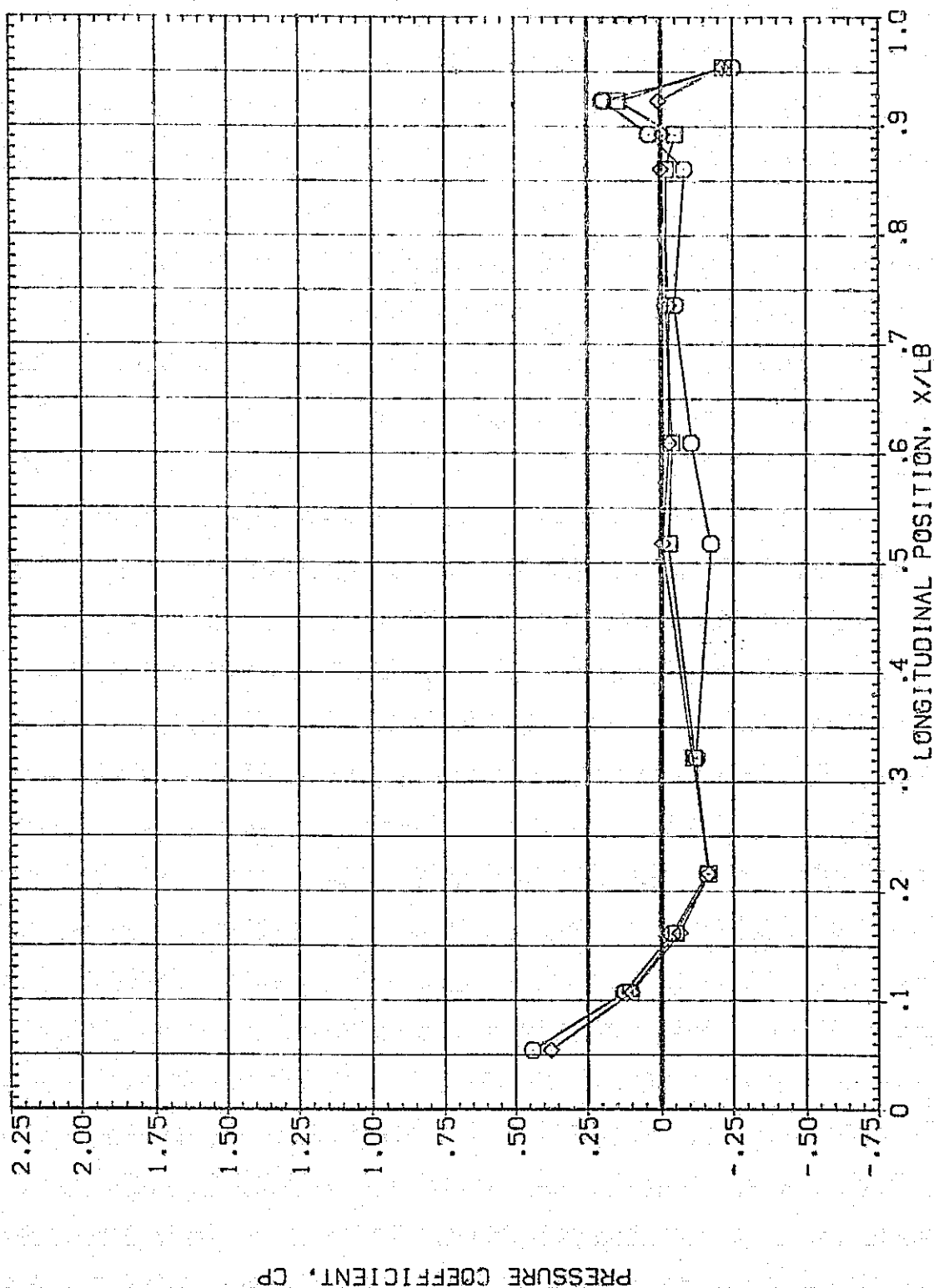


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (PIA015)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	.000
○	112.500	7.840	1.960	1.000	PHI	90.000
□	135.000					
◇	157.500					

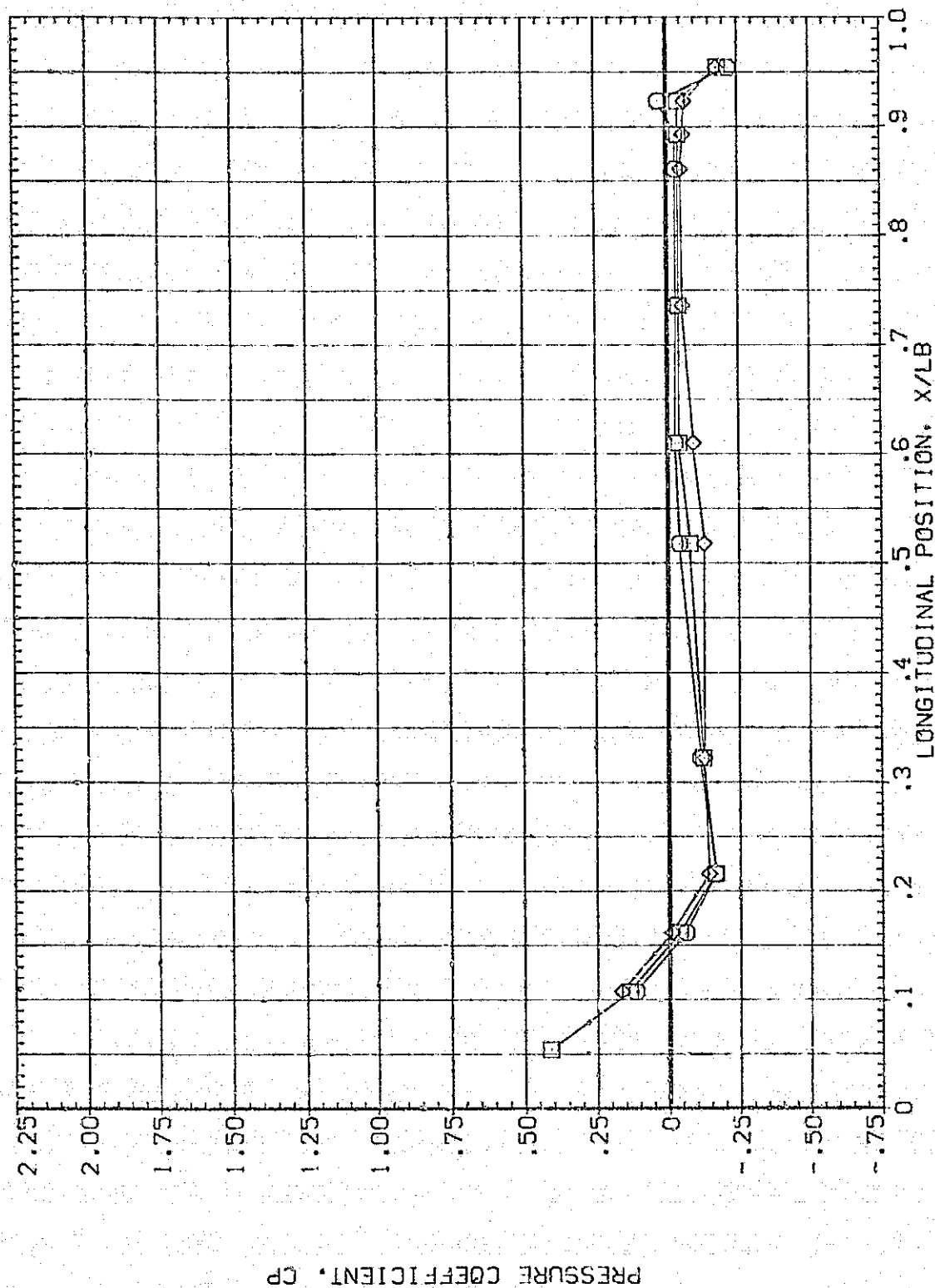


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 130.000 7.840 1.960  
 232.500  
 225.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 PHJ 90.000  
 OFFSET .000

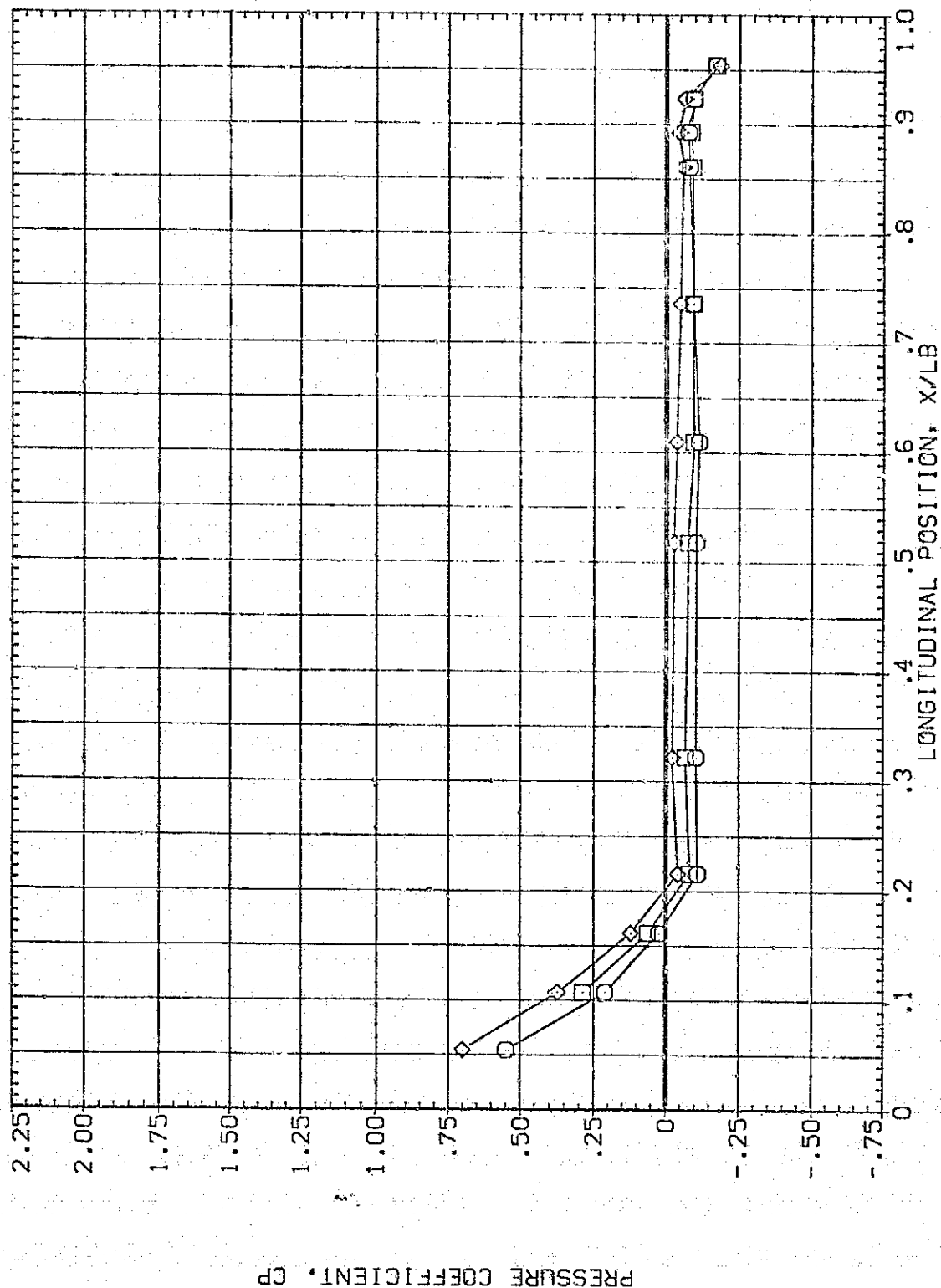


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA015)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	7.840	1.960	1.000	.000	.000
□	270.000					90.000
◇	292.500					

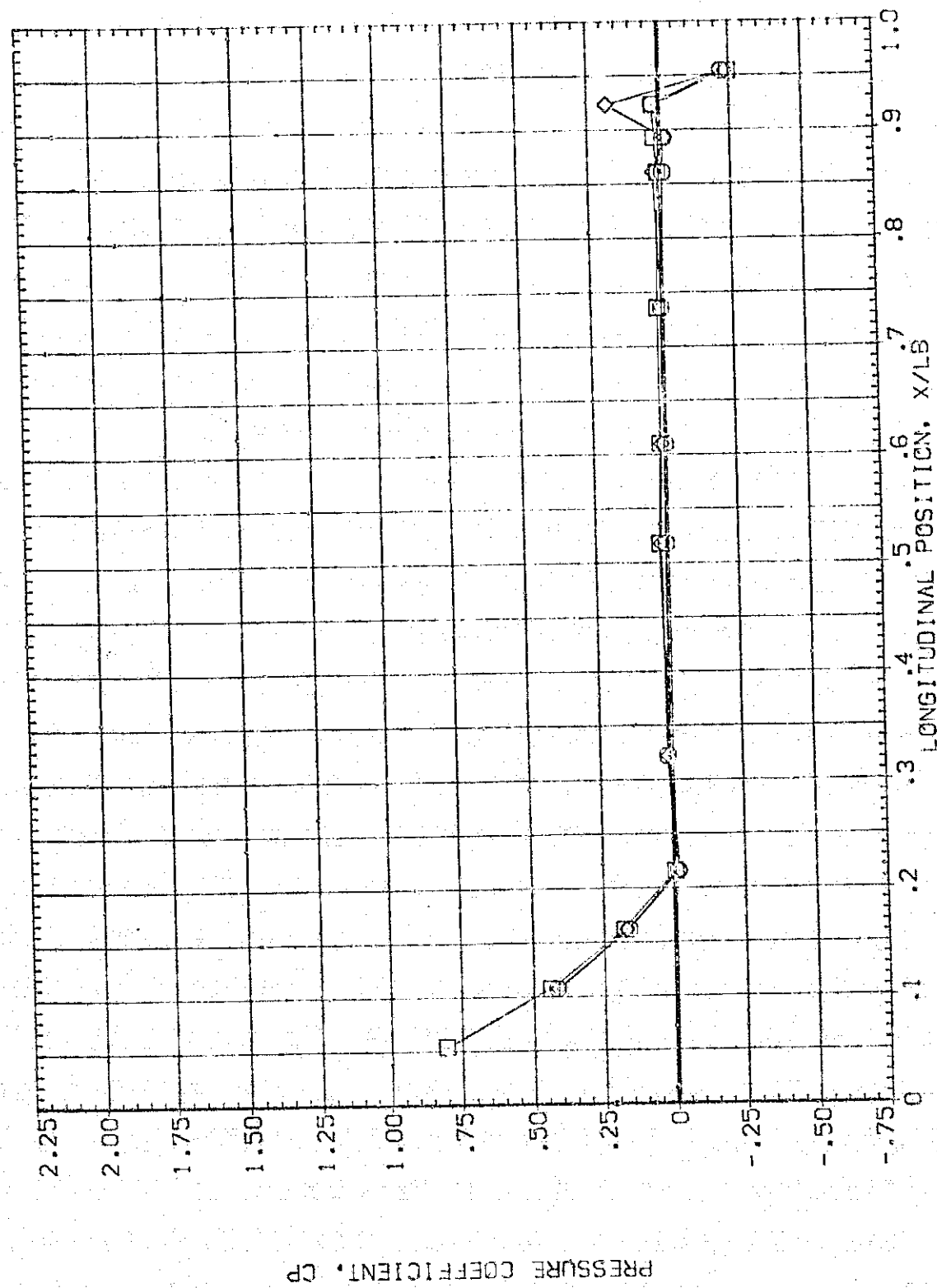


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA015)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
◇	315.000	7.840	1.960	1.002	.000	.000
○	388.000					
□	346.000					

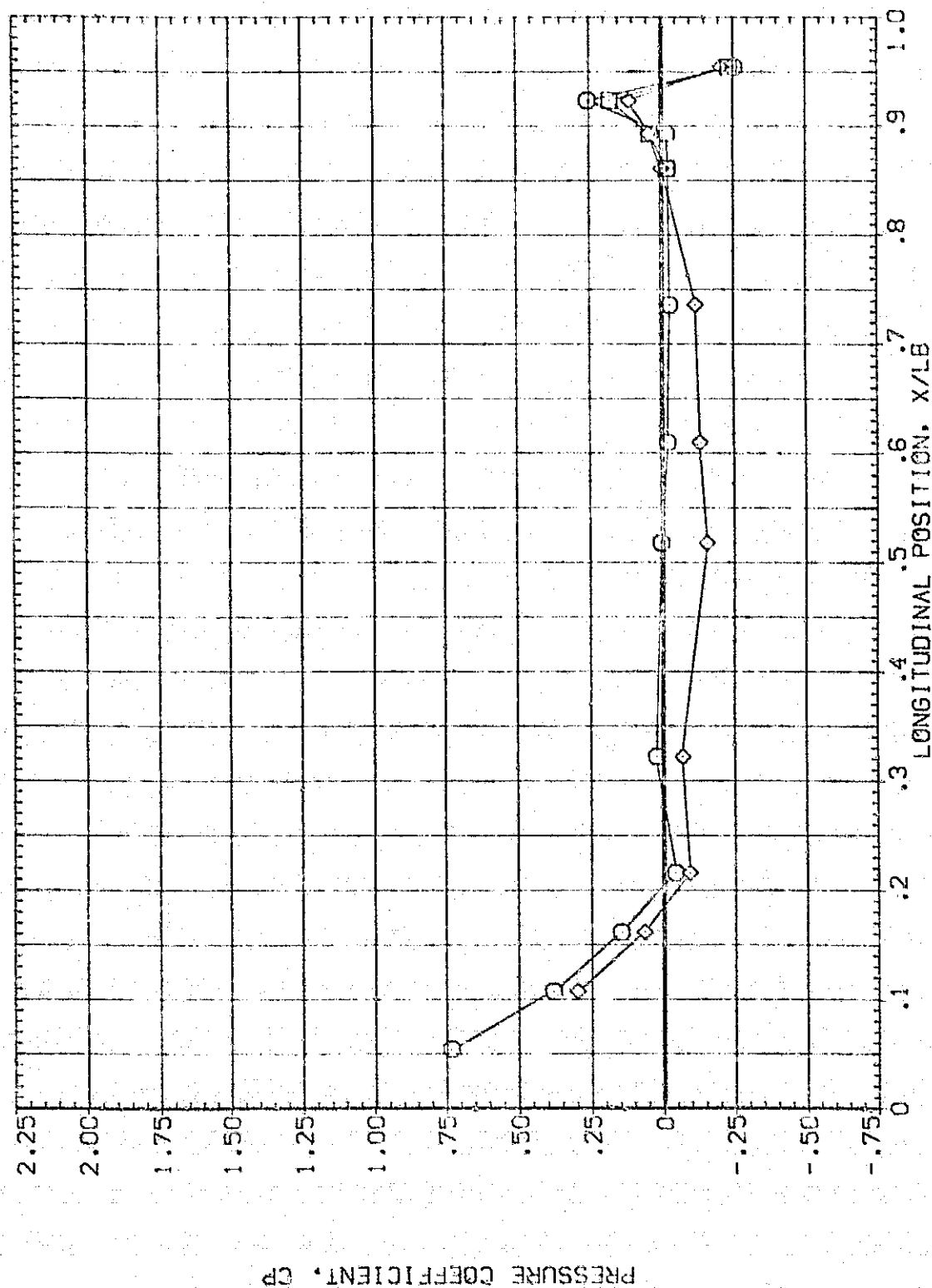


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

PARAMETRIC VALUES

20.000  
90.000

BETA  
MOUNT

PARAMETRIC VALUES

MACH 1.960

ALPHA  
12.550

THEY  
GOOD

SYMBOL

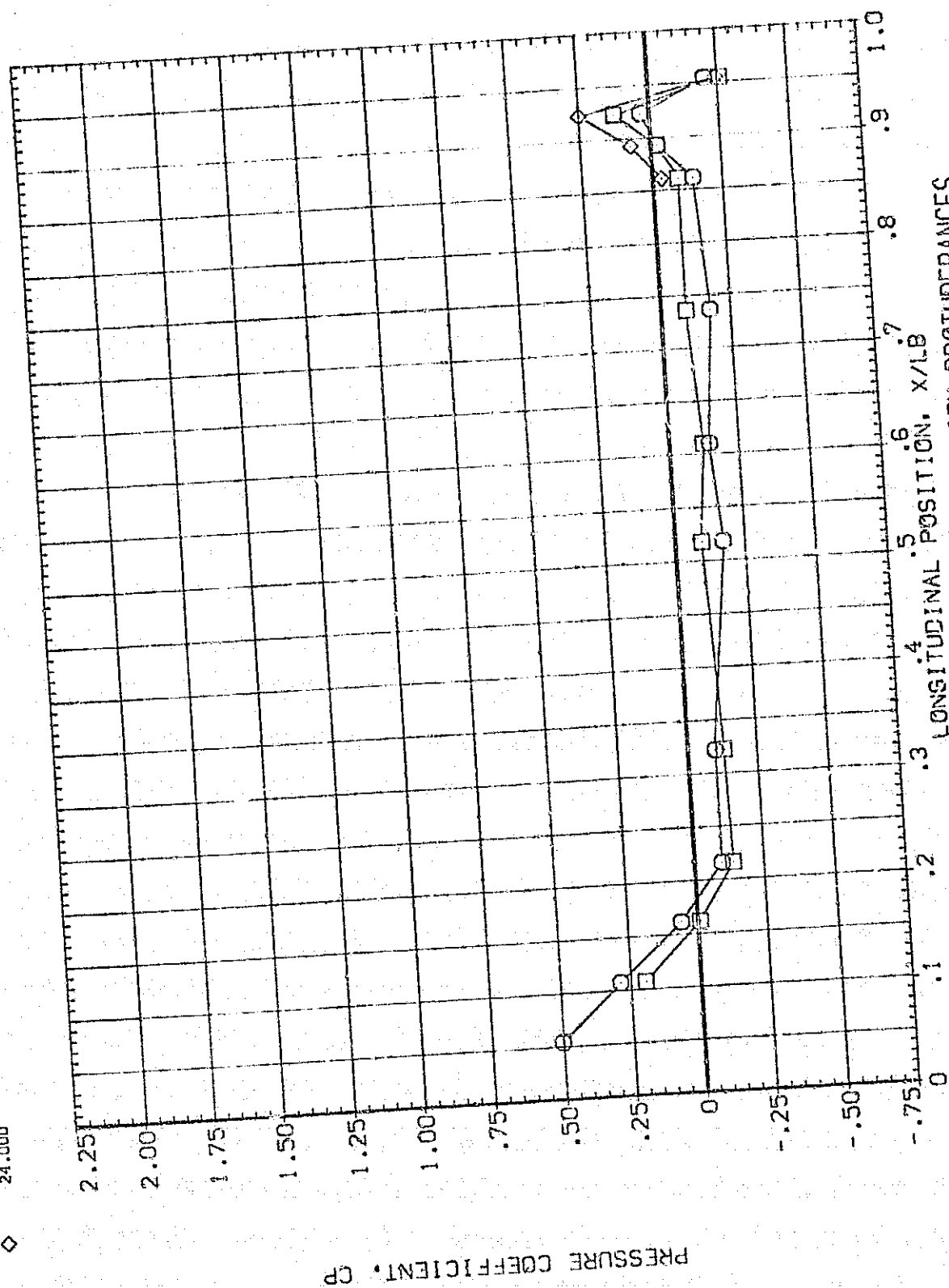


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES		
	45.000	57.500	12.550	1.980	BETA MOUNT	.000 PHI	.000 OFFSET	20.000	90.000
○									
□									
◇									

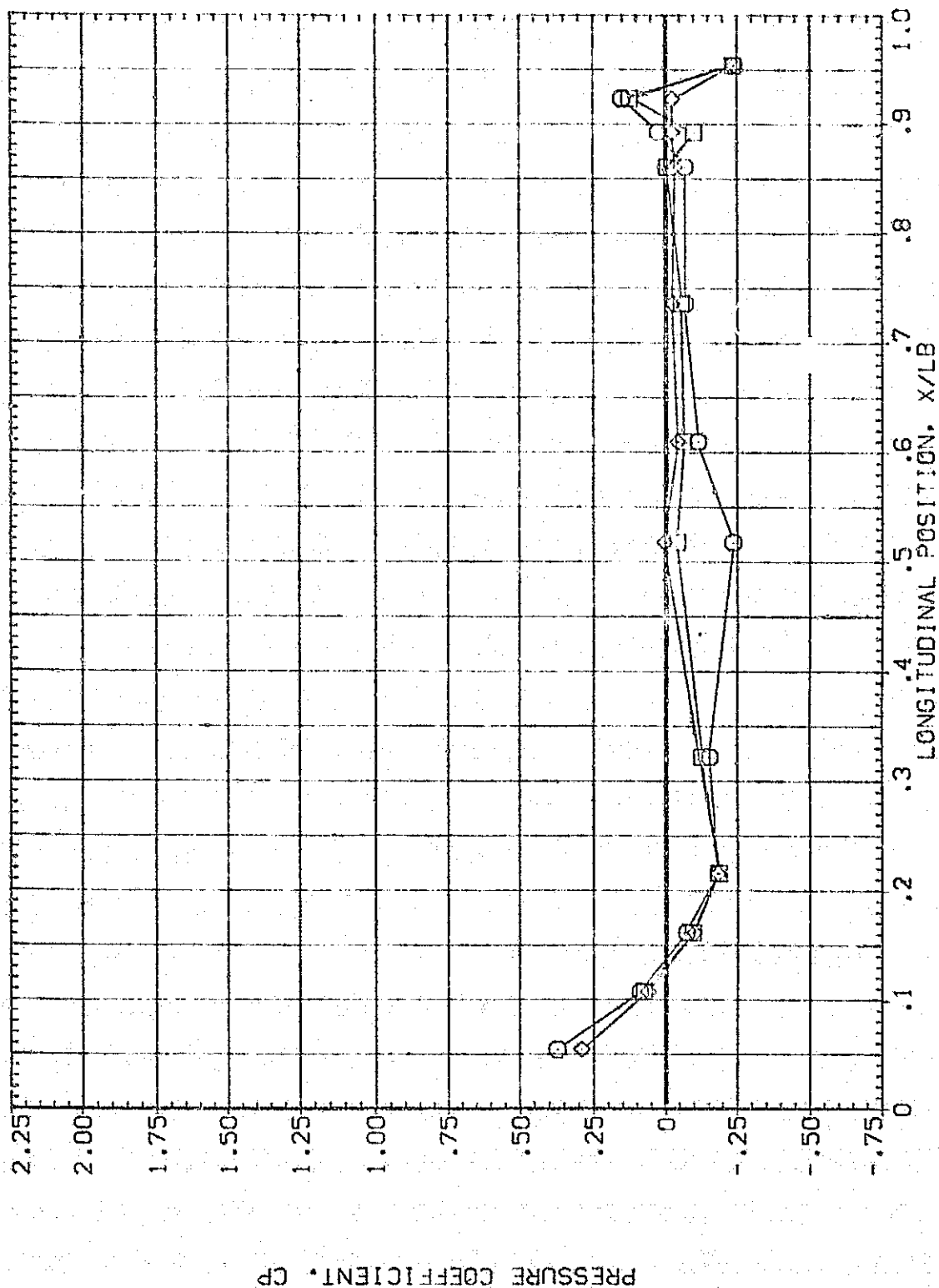


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA016)

SYMBOL  
 ◇  
 □  
 ○

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 12.550

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000

OFFSET  
 PHI

20.000  
 90.000

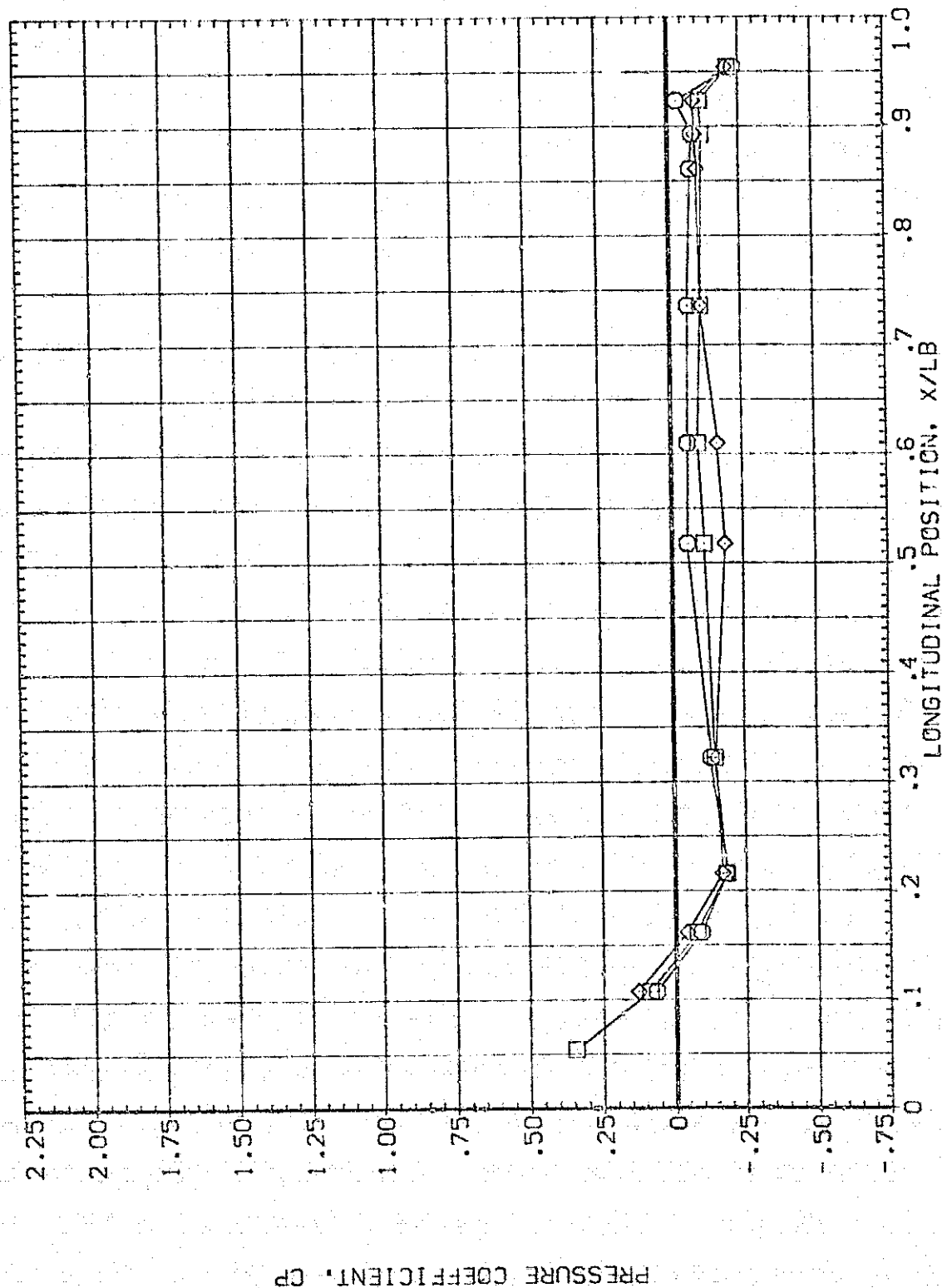


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	130.000	12.550	1.960	MOUNT		
□	232.500					
◇	225.000					

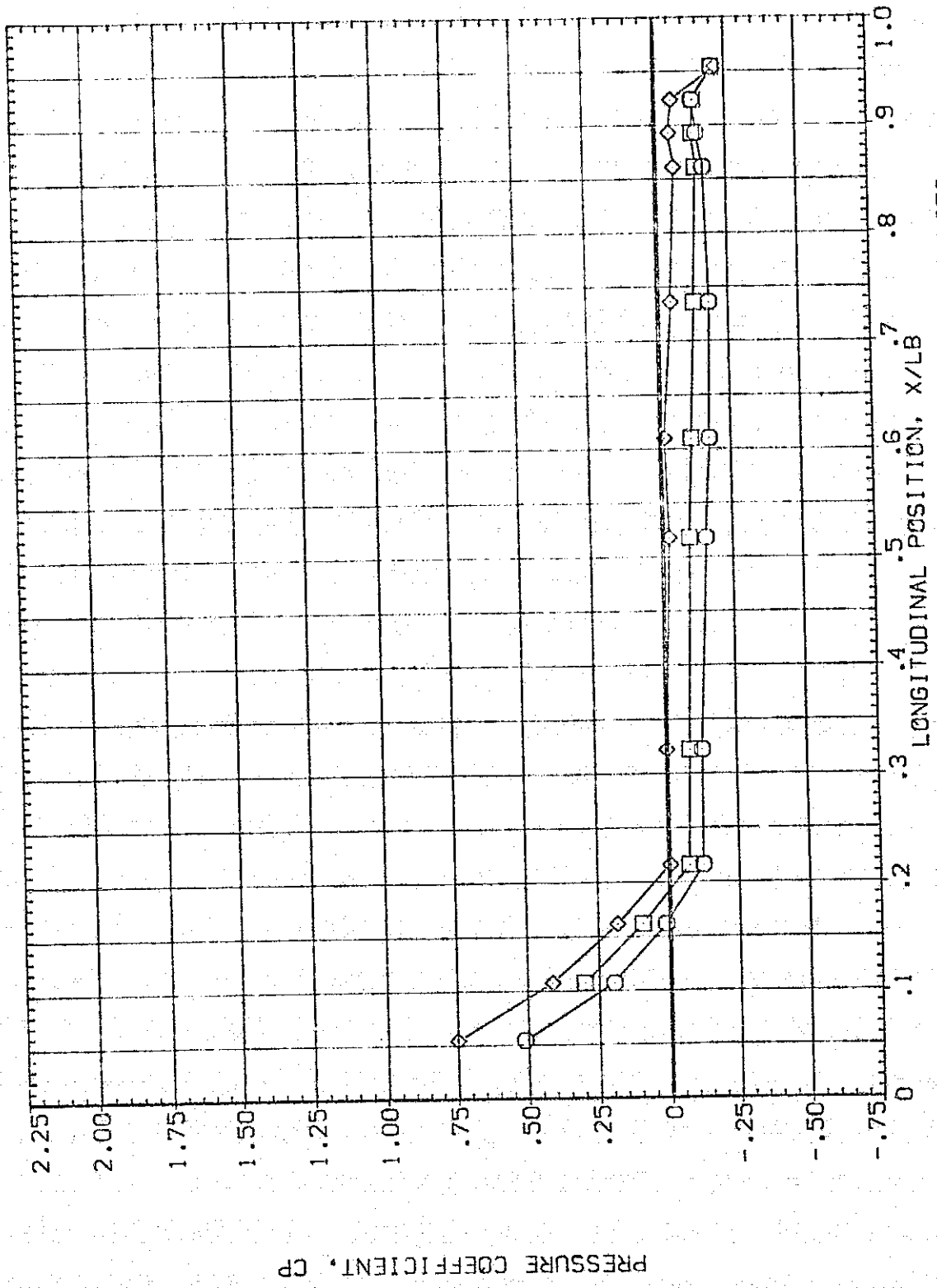


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A016)

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI  
 20.000  
 90.000

SYMBOL THETA ALPHA MACH  
 247.500 12.550 1.960  
 270.000  
 292.500

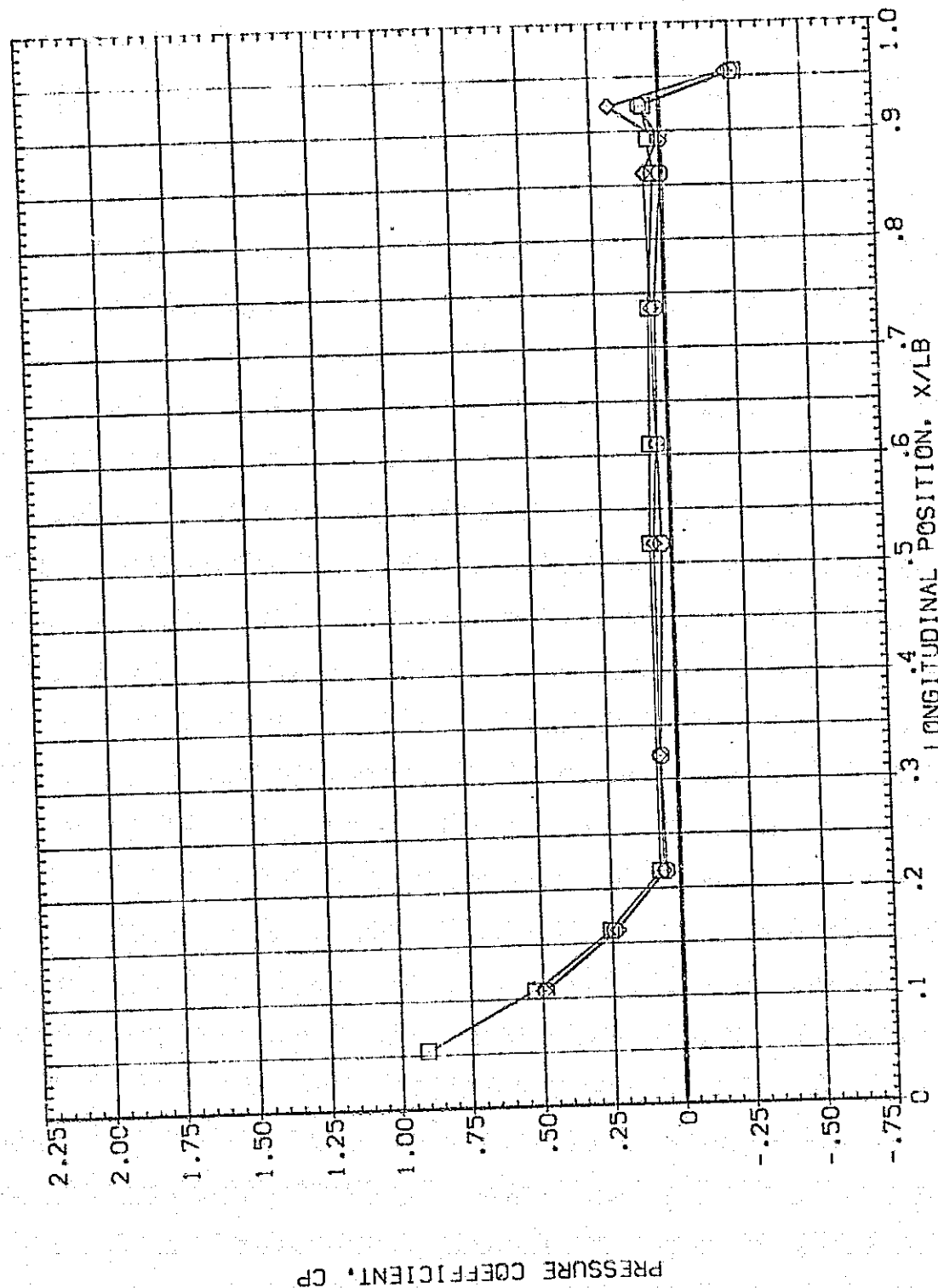


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA016)

SYMBOL THETA ALPHA MACH  
 ○ 315.000 12.550 1.960  
 □ 326.000  
 ◇ 346.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 90.000

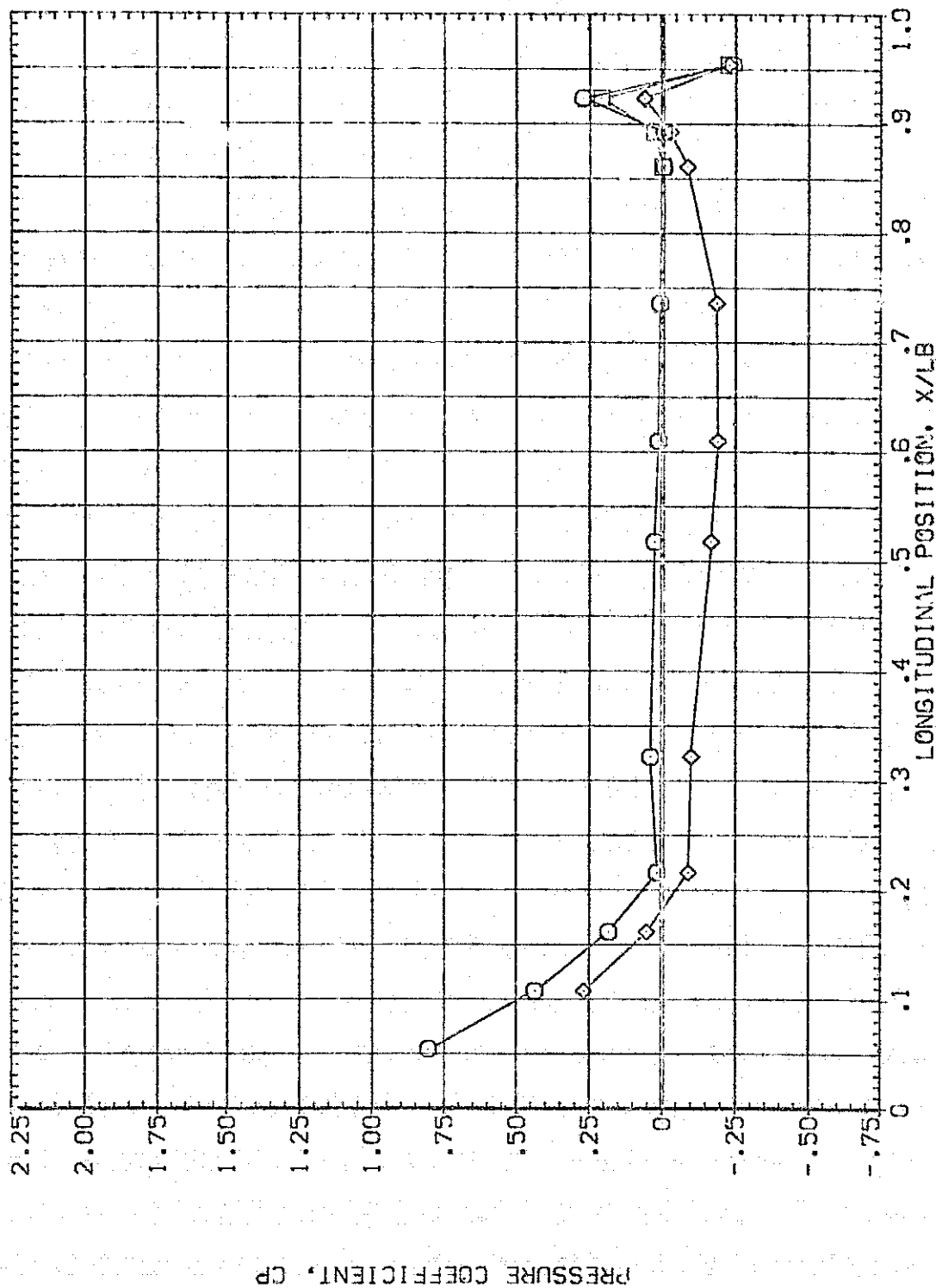


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA017)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	.000	16.660	1.960	.000	20.000	
□	14.000			1.000	90.000	
◇	24.000					

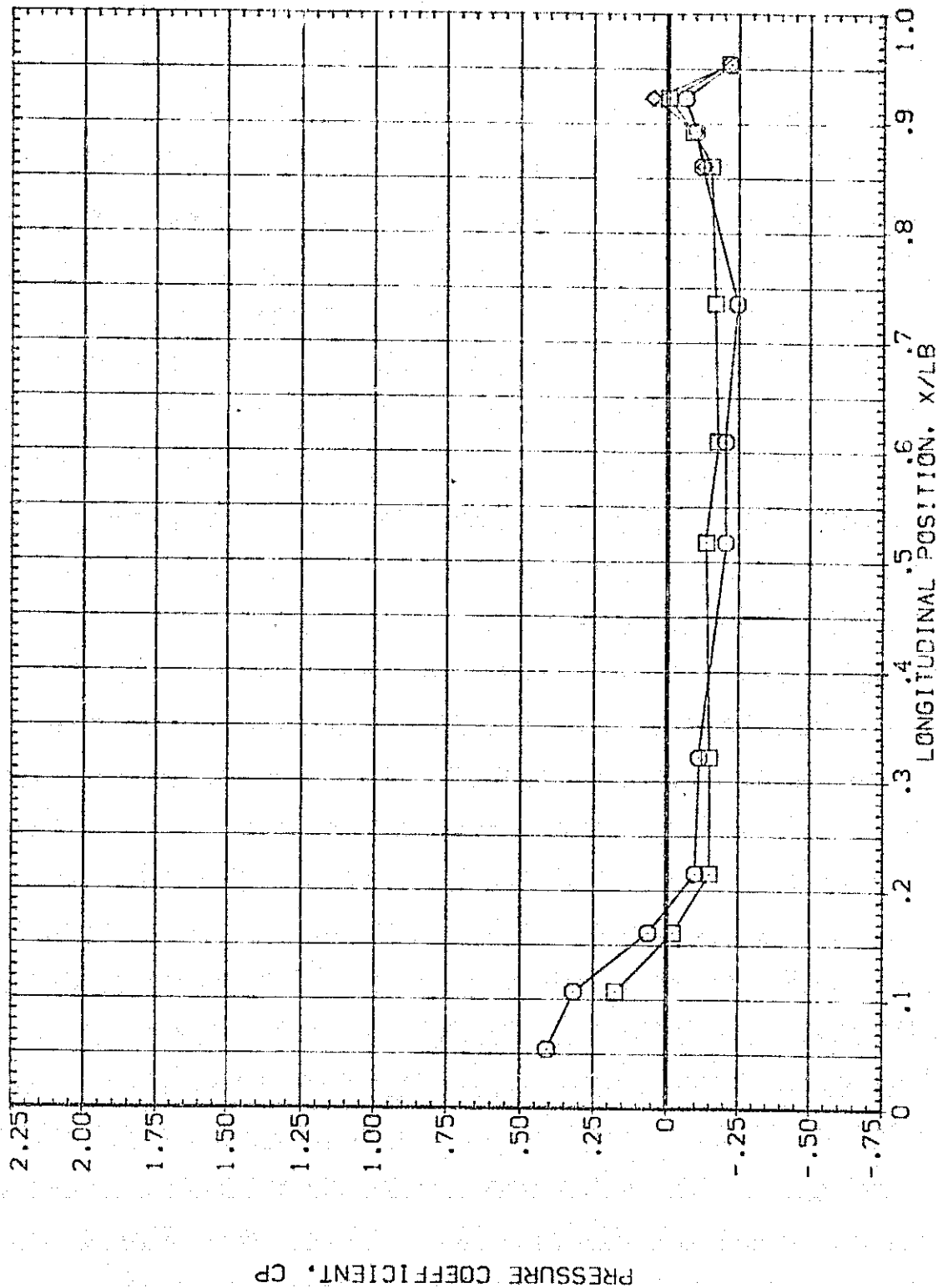


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

(P1A017)

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

PARAMETRIC VALUES  
BETA .000  
MOUNT 1.500  
OFFSET PHI 20.000  
90.000

SYMBOL  
45.000  
57.500  
90.000  
THETA ALPHA MACH  
16.660 1.960

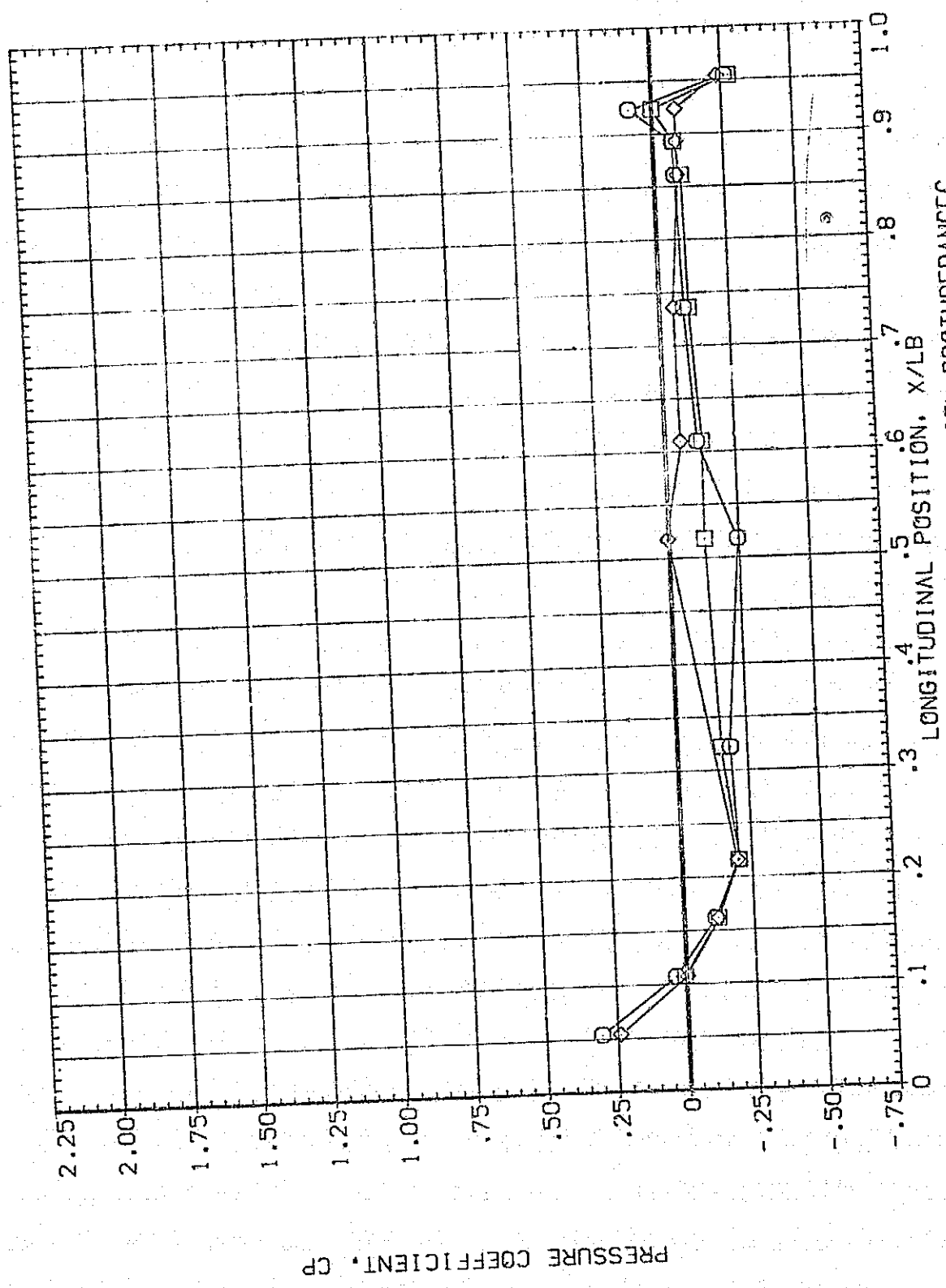


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA017)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	16.560	1.980	.000	.000	20.000
□	135.000			1.000		90.000
◇	157.500					

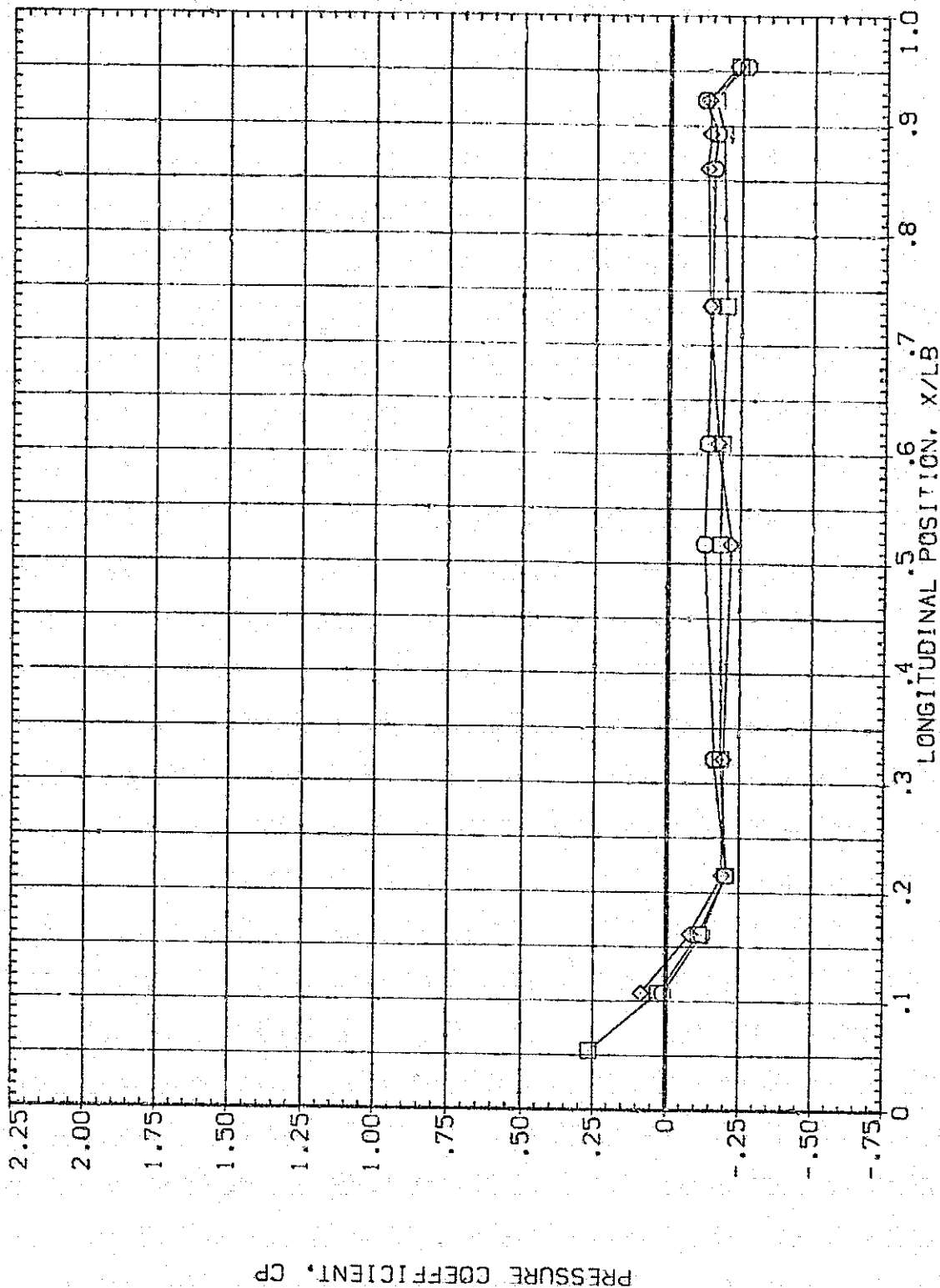


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	130.000	16.660	1.960	MCOUNT	.000 OFFSET 20.000
□	232.500				1.000 PHI 90.000
◇	225.000				

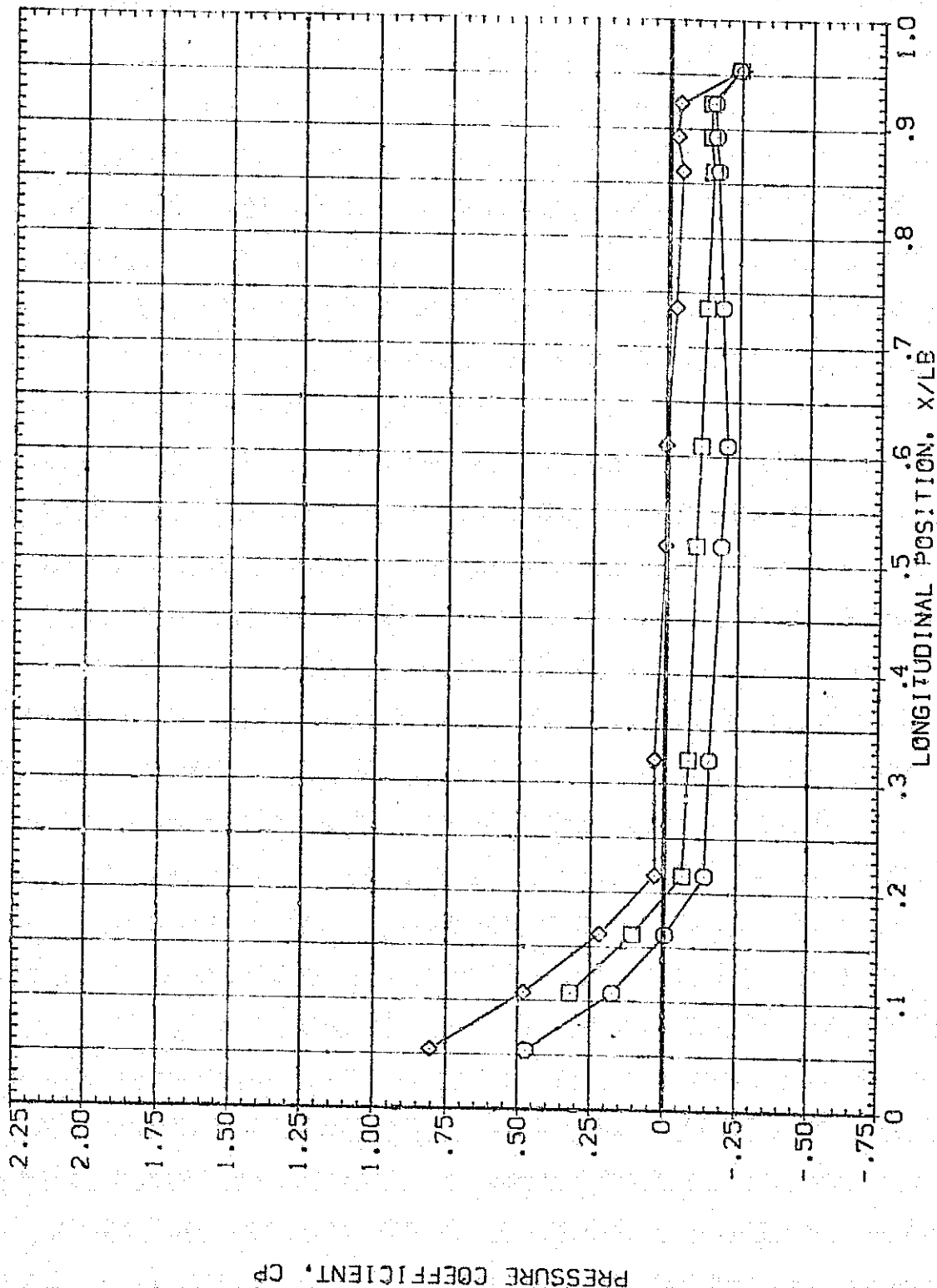


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA017)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	16.660	1.960	1.000	.000	20.000
□	270.000			MOUNT		90.000
◇	292.500					

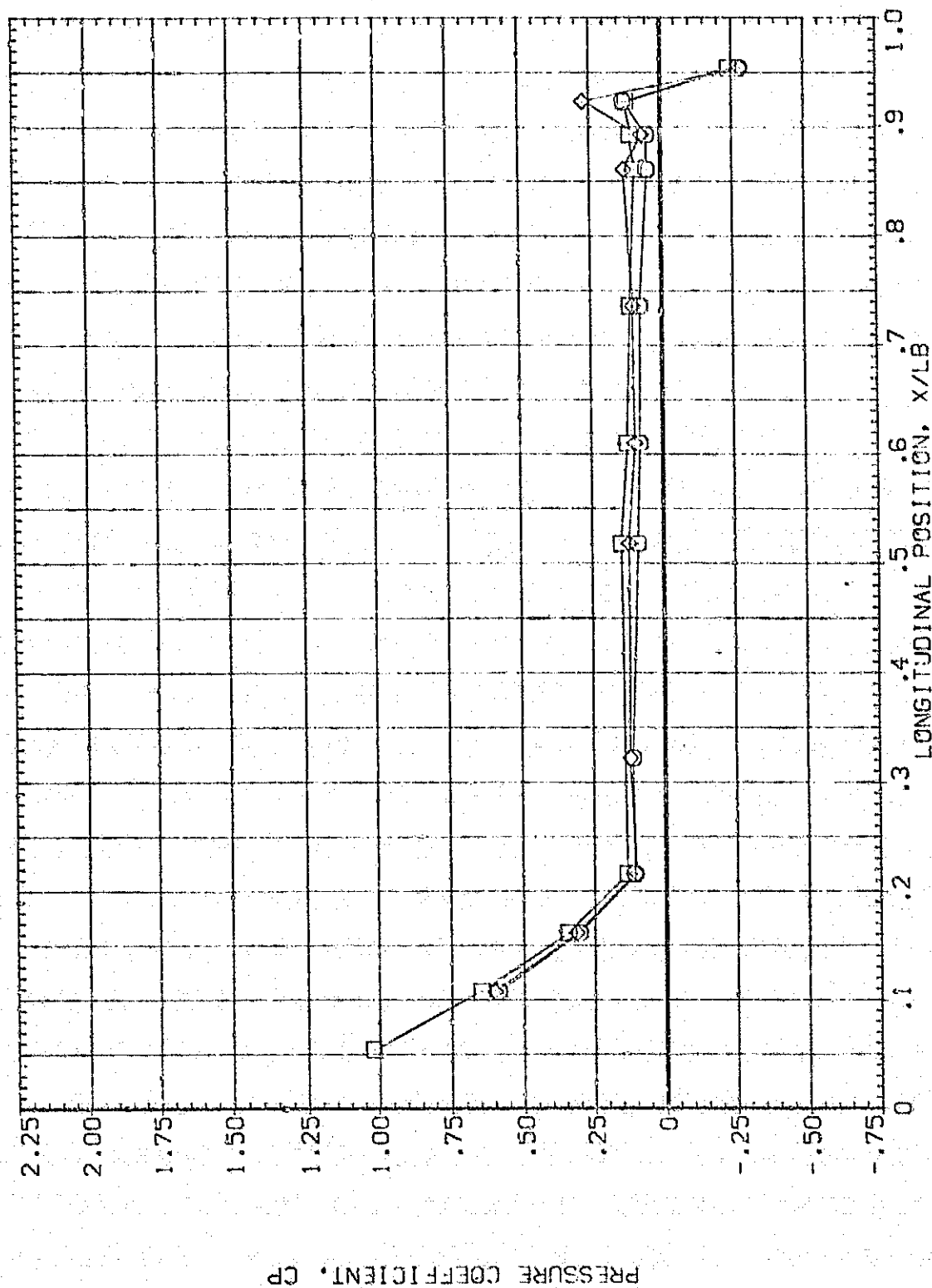


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 315.000 15.660 1.960  
 325.000  
 345.000

PARAMETRIC VALUES  
 .000 OFFSET 29.000  
 1.000 PHI 80.000

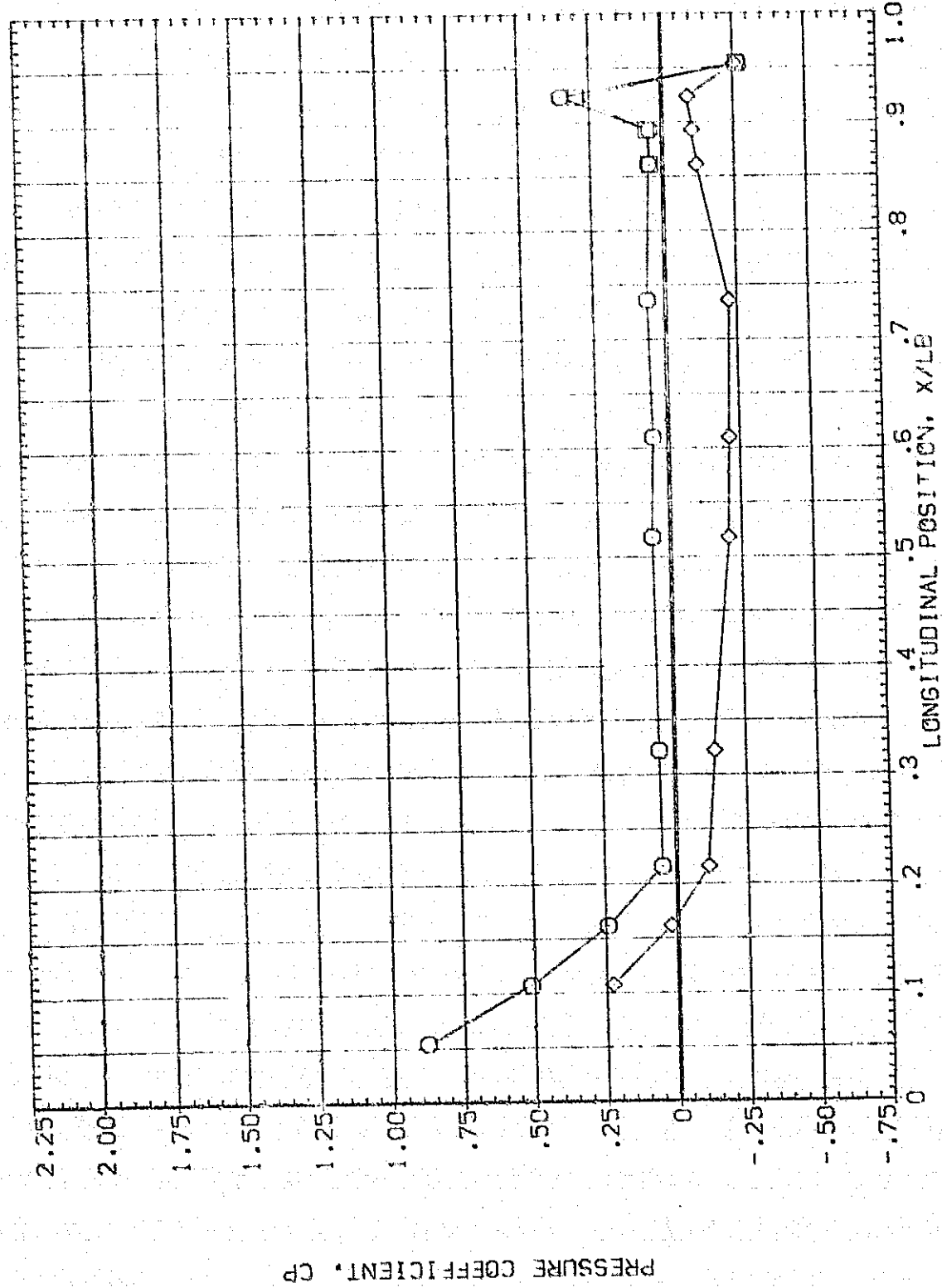


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA018)

SYMBOL	THETA		ALPHA		MACH		BETA		PARAMETRIC VALUES	
	.000	14.000	20.740	20.740	1.960	1.960	MOUNT	.000	OFFSET	20.000
○								1.000	PHI	90.000
□										
◇										

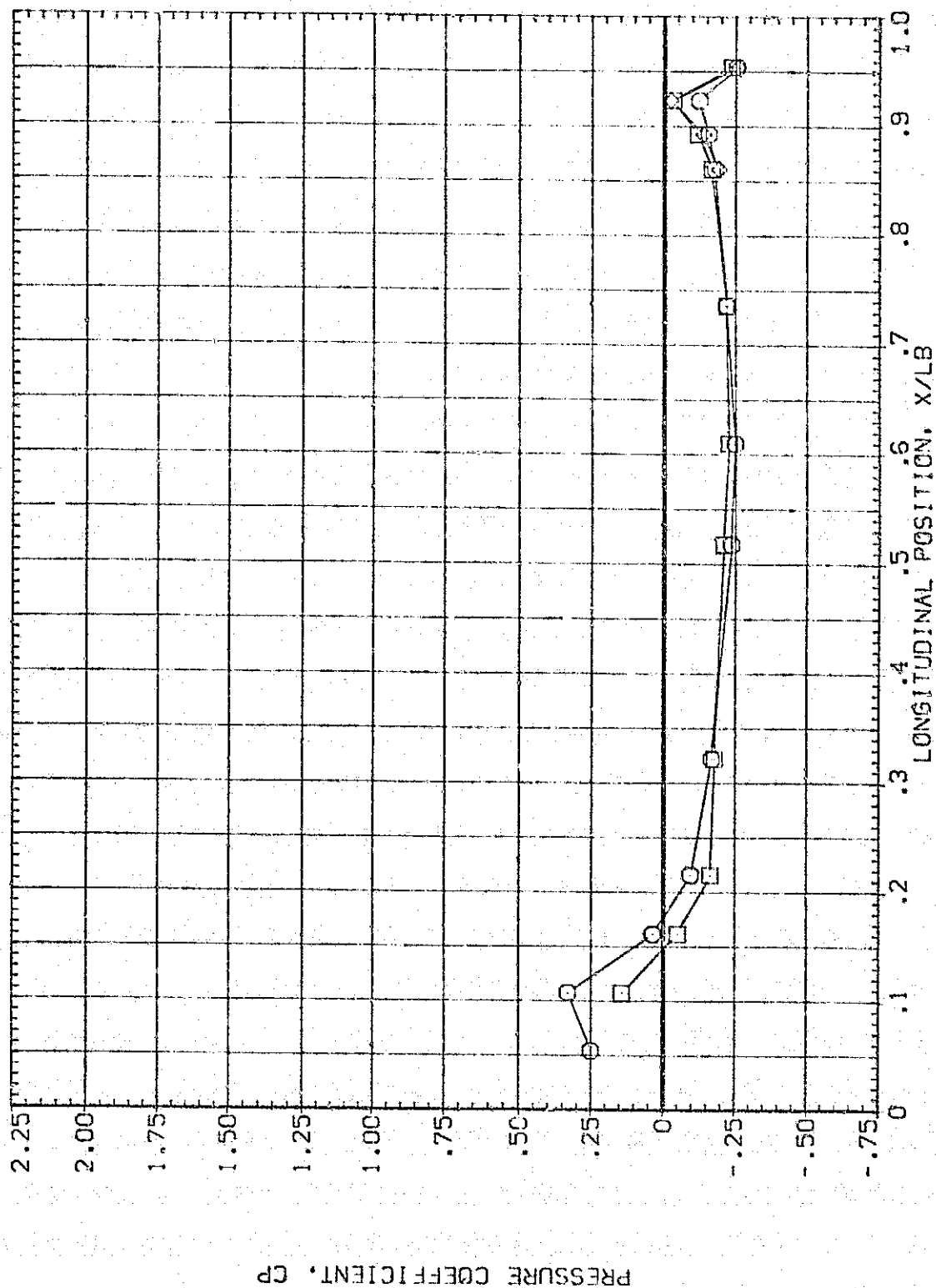


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
20.000  
50.000  
-000  
1.000  
OFFSET  
PHI

ALPHA  
20.740  
MACH  
1.960

SYMBOL  
◇  
□  
◇

THETA  
45.000  
57.500  
90.000

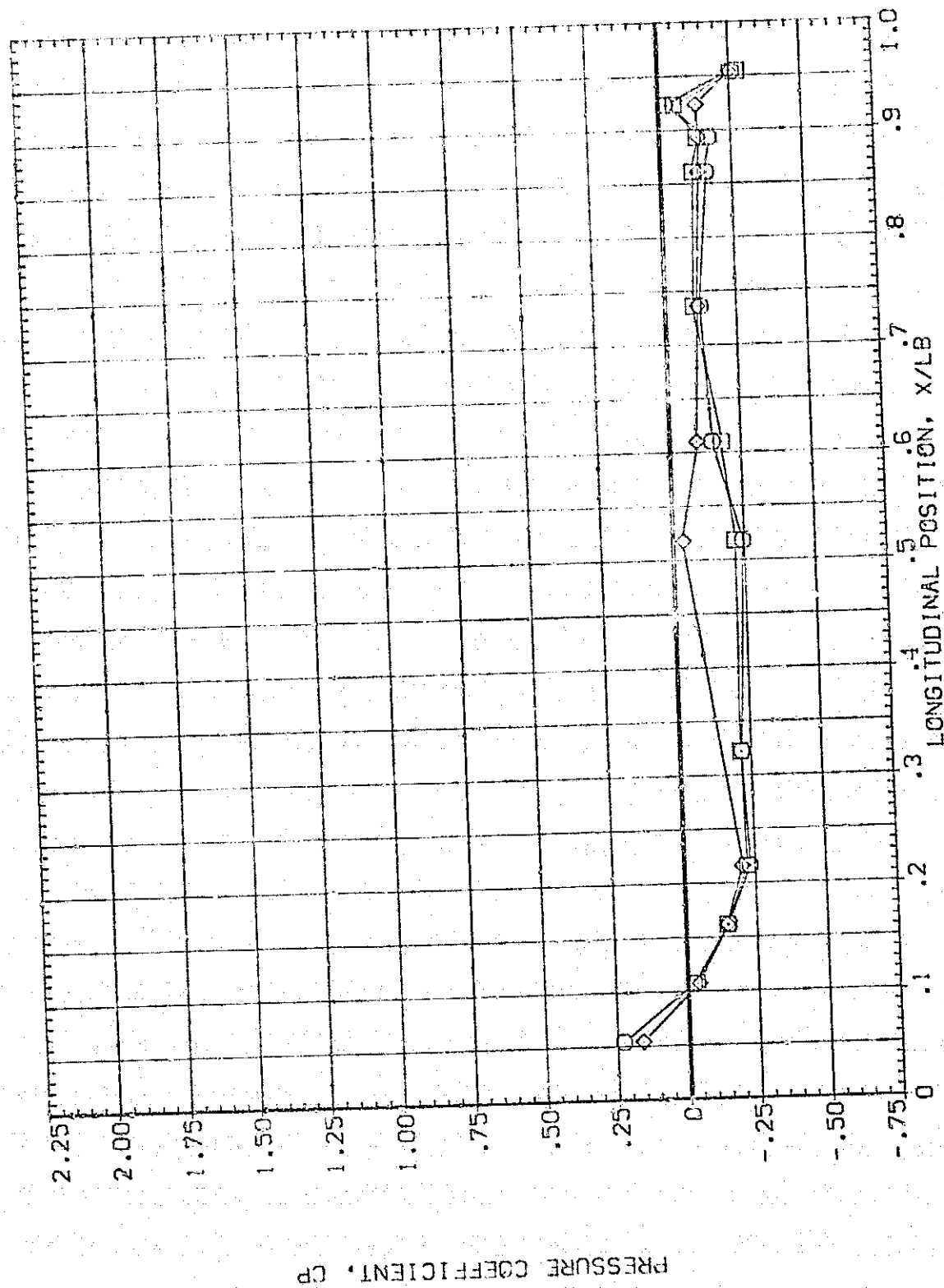


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA018)

SYMBOL

THETA  
112.500  
135.000  
157.500

ALPHA  
20.740

MACH  
1.980

PARAMETRIC VALUES  
BETA  
HOUNT  
1.000  
1.000  
PHI  
20.000  
90.000

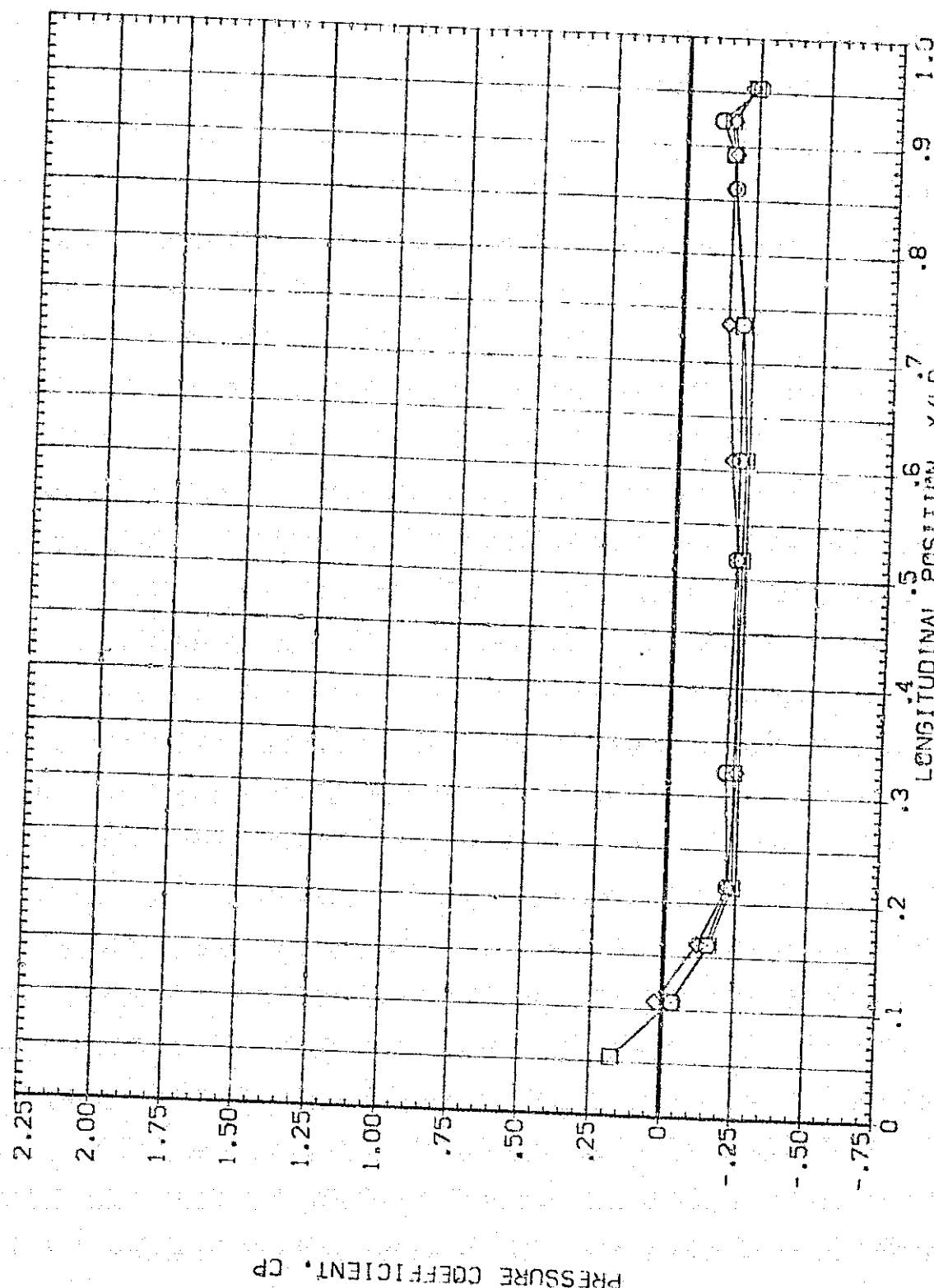


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 O 130.000 20.740 1.960  
 □ 232.500  
 ◇ 225.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET 20.000  
 P-1 90.000

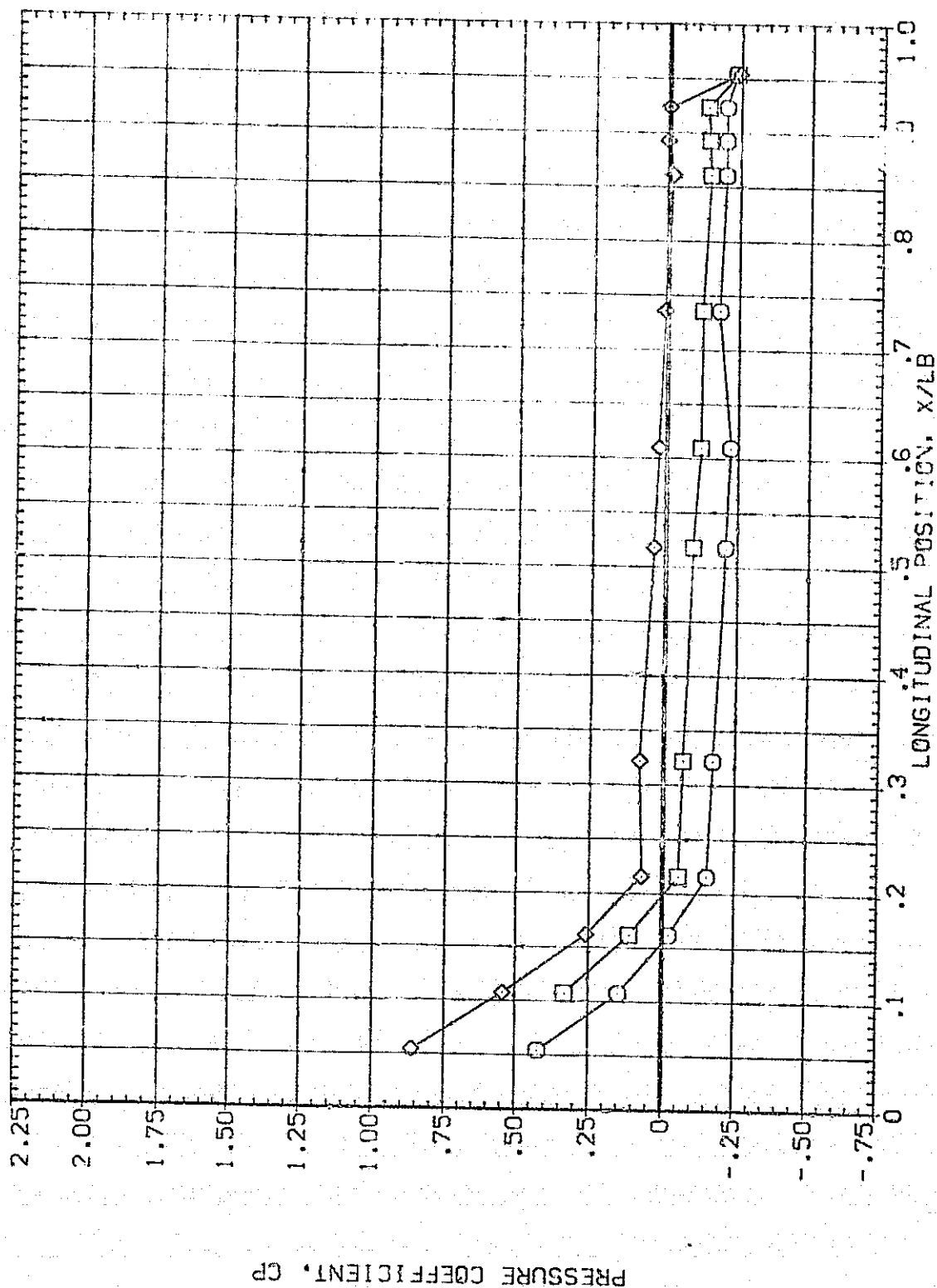


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA018)

SYMBOL THETA ALPHA MACH  
 O 247.500 20.740 1.960  
 □ 270.000  
 ◇ 292.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 90.000

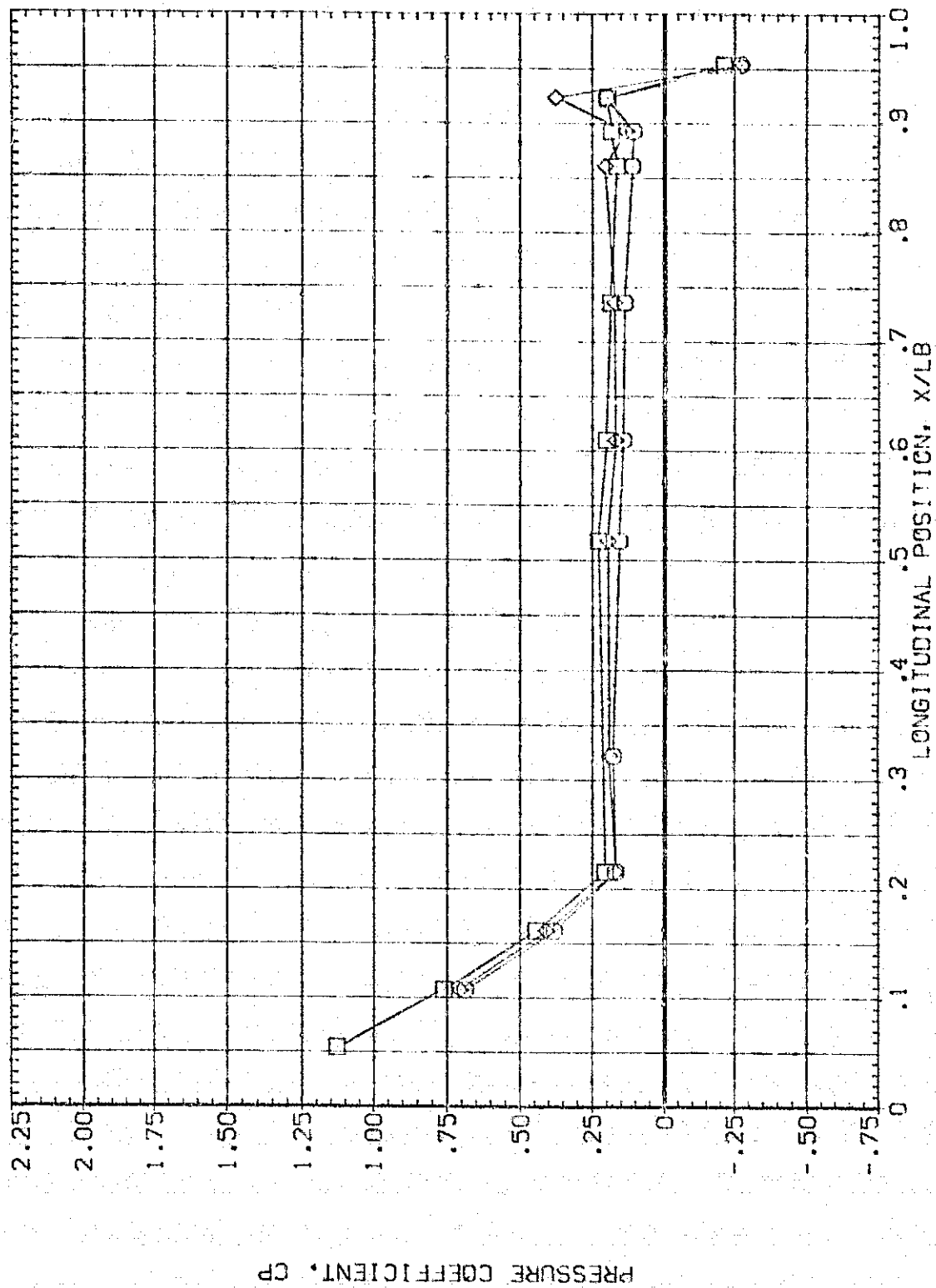


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 90.000

BETA  
 MOUNT

THETA ALPHA MACH  
 315.000 20.740 1.960  
 326.000  
 346.000

SYMBOL  
 ○ □ ◇

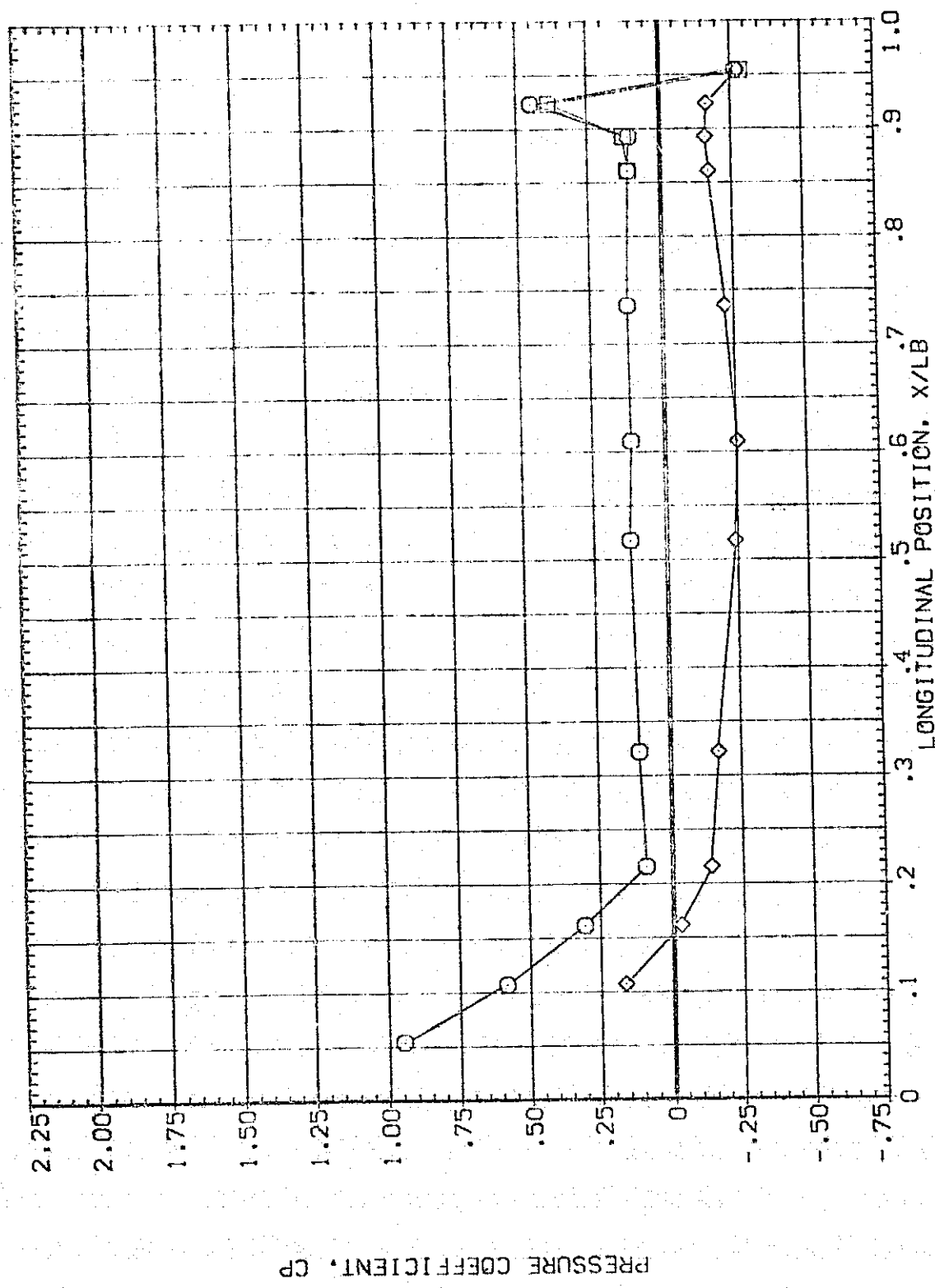


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A019)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	.000	14.000	24.850	24.850	1.960	1.960	BETA	.000	OFFSET	20.000
	24.000						MCOUNT	1.000	PHI	90.000

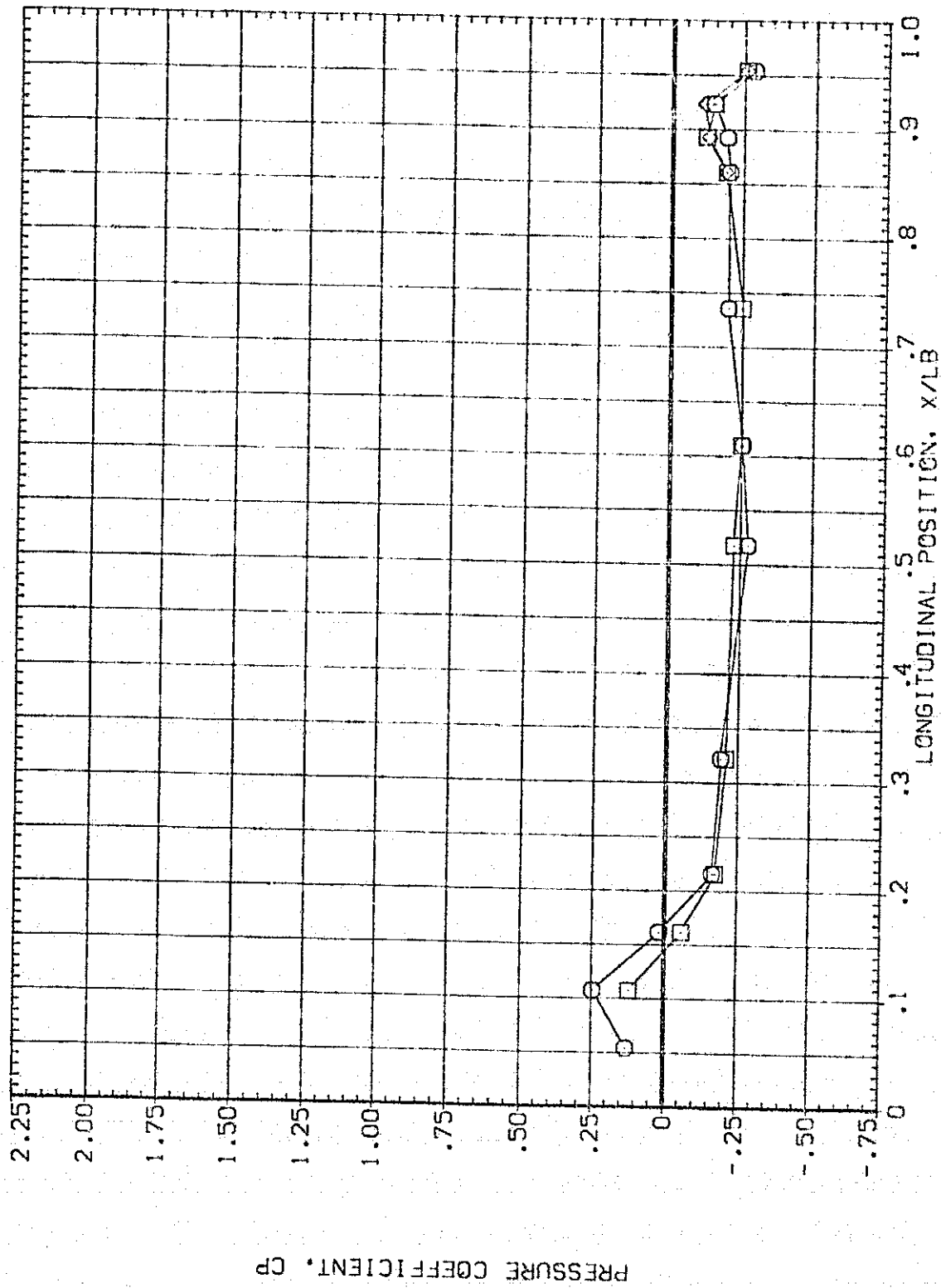


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA019)

SYMBOL	THETA		ALPHA		MACH		BETA		PARAMETRIC VALUES	
	45.000	24.850	24.850	1.960	45.000	24.850	1.000	1.000	.000	OFFSET
○	37.500								1.000	PHI
◇	30.000								20.000	
									90.000	

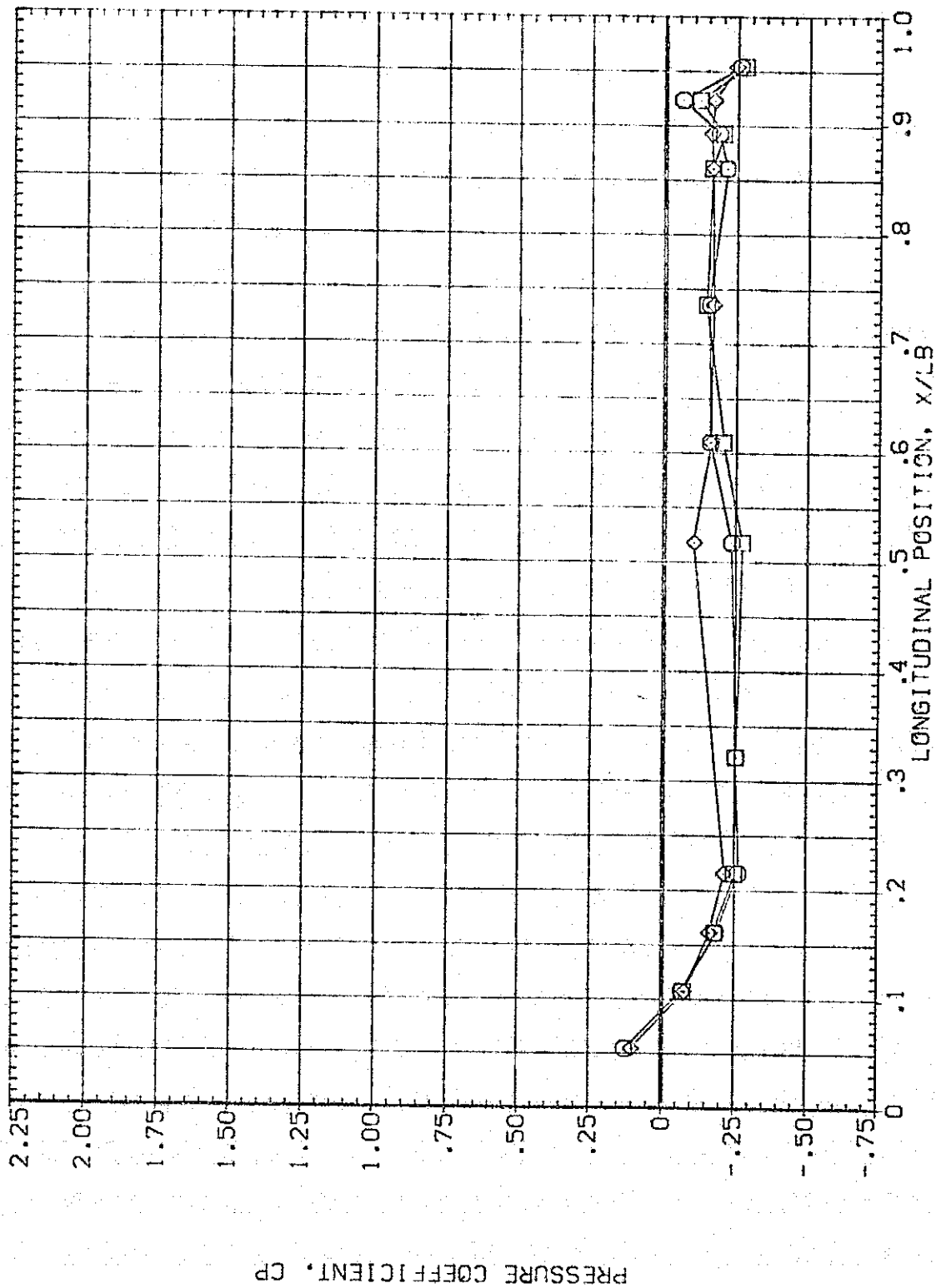


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA019)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSE	PHI
○	112.500	24.850	1.960	.000	1.000	20.000
□	135.000			.000	1.000	90.000
◇	157.500					

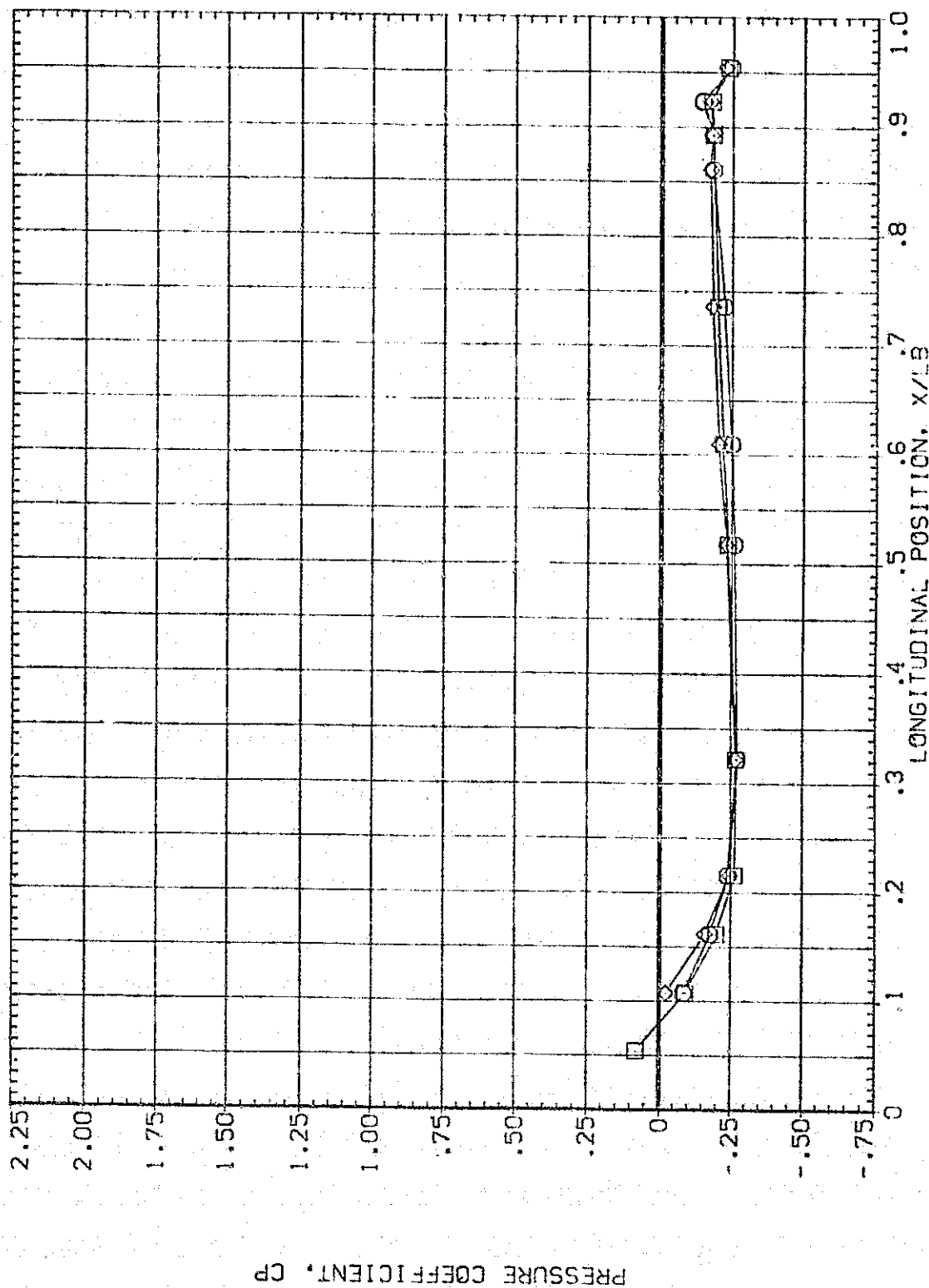


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○ □ ◇

THETA  
 130.000  
 232.500  
 225.000

ALPHA  
 24.850

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 1.000  
 OFFSET PHI

20.000  
 90.000

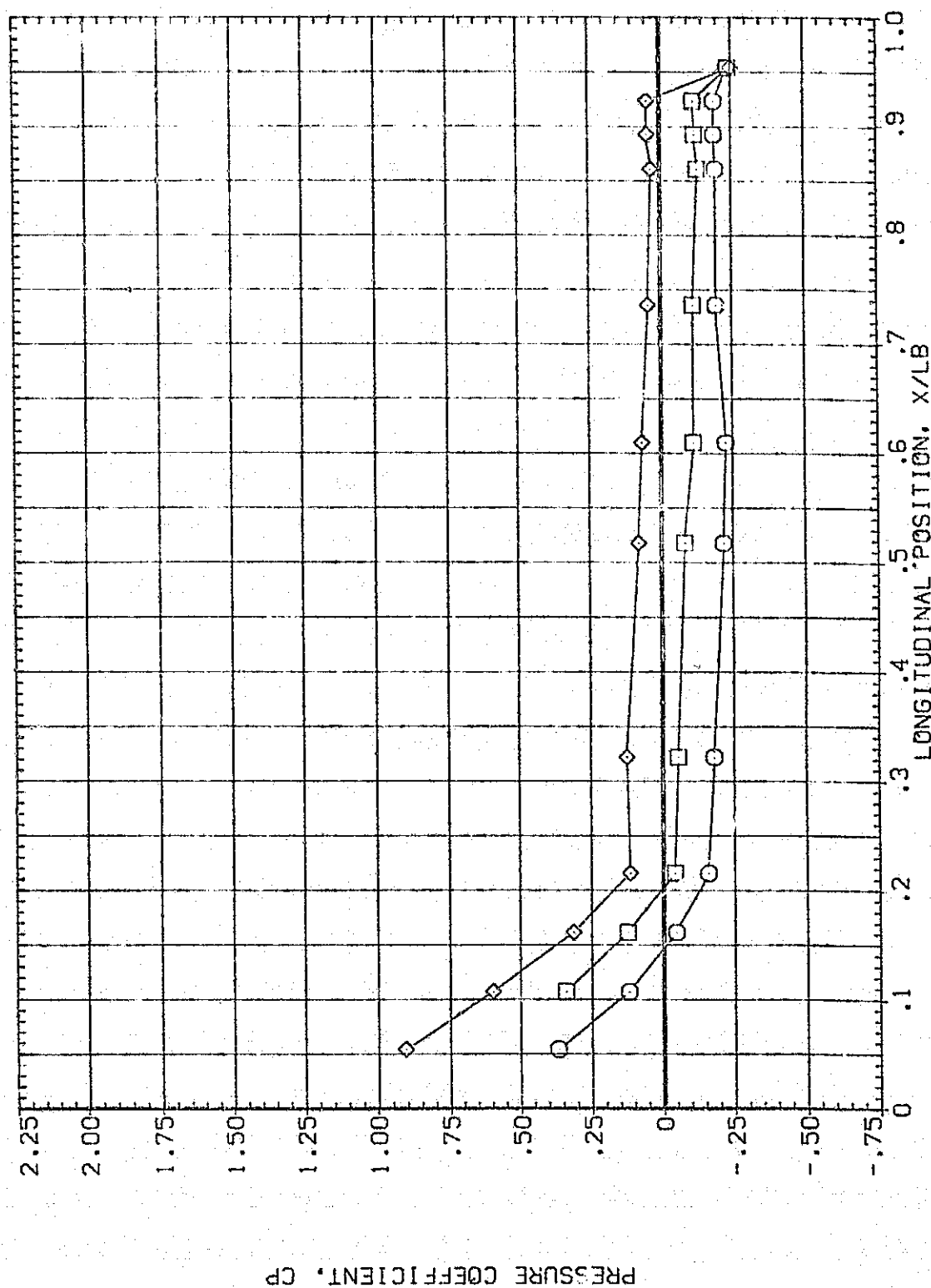


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA019)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
24.850

MACH  
1.960

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI

20.000  
90.000

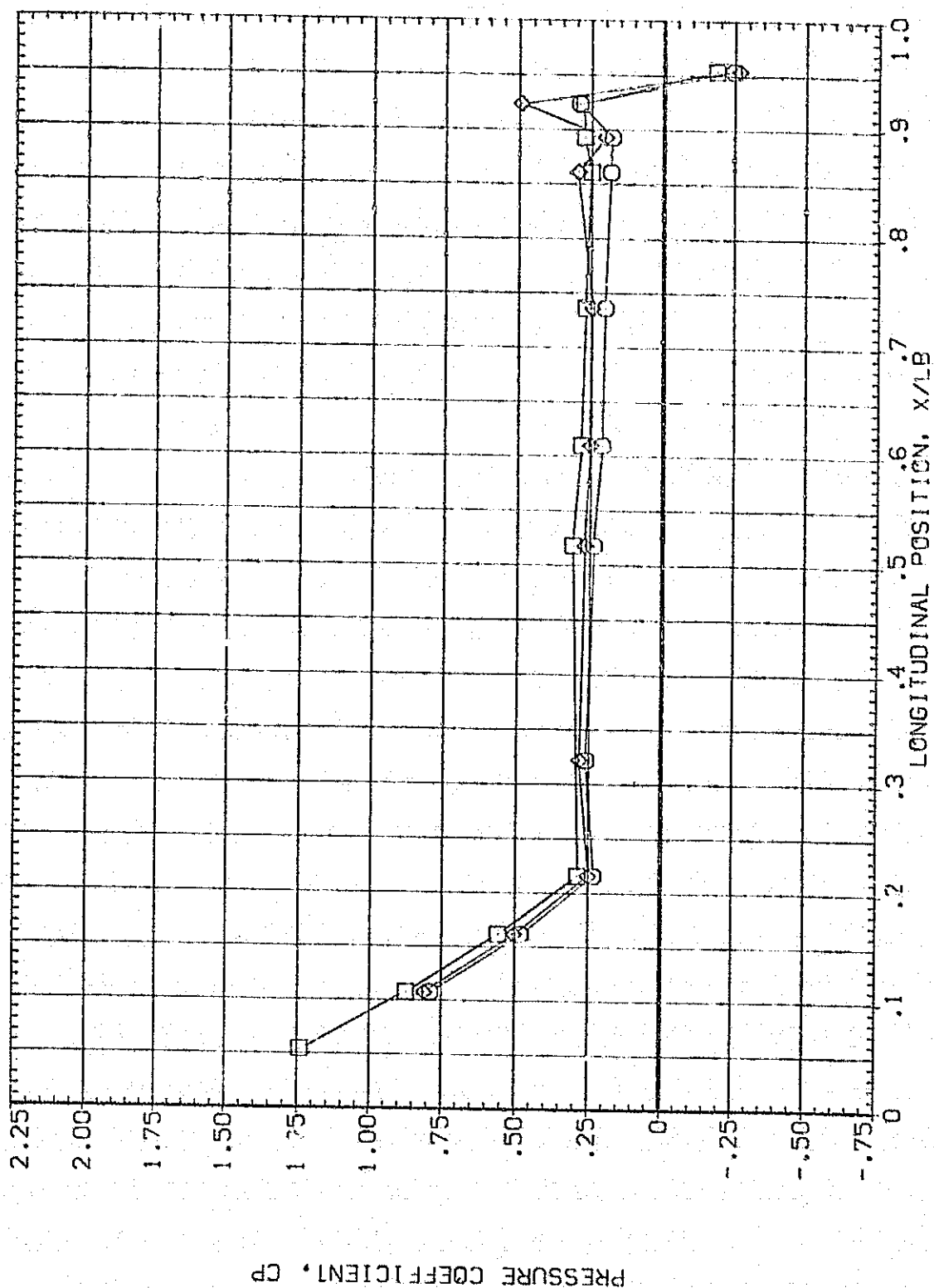


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 .000 .000  
 1.000 1.000  
 P-1 P-1

BETA  
 MOUNT

MACH  
 1.960

ALPHA  
 24.850

THETA  
 315.000  
 326.000  
 346.000

SYMBOL  
 ○ □ ◇

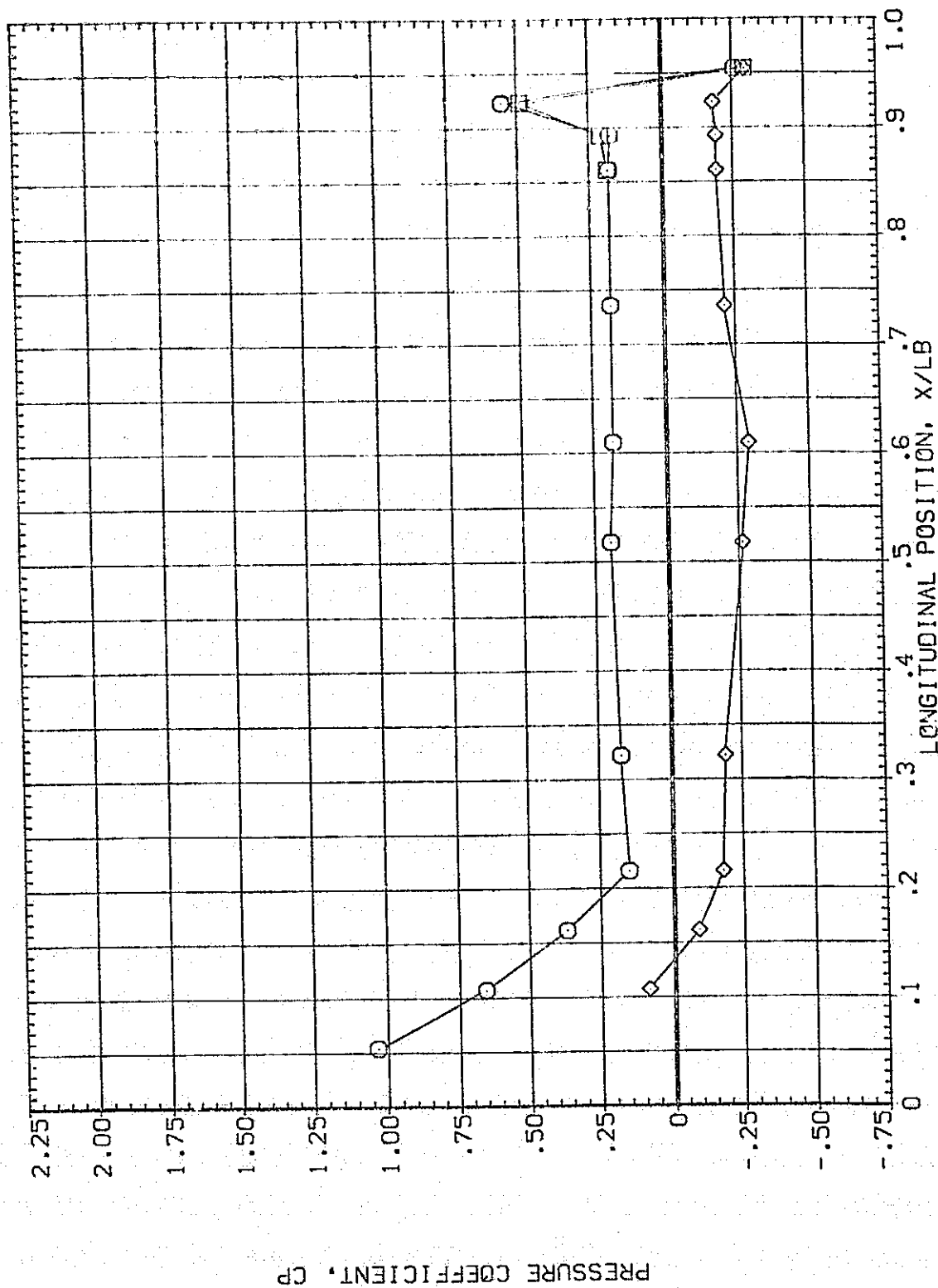


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A020)

PARAMETRIC VALUES  
 BETA .000  
 HOUNT 1.000  
 OFFSET 20.000  
 PHI 90.000

SYMBOL  
 THETA .000  
 ALPHA 28.930  
 MACH 1.960  
 14.000  
 24.000

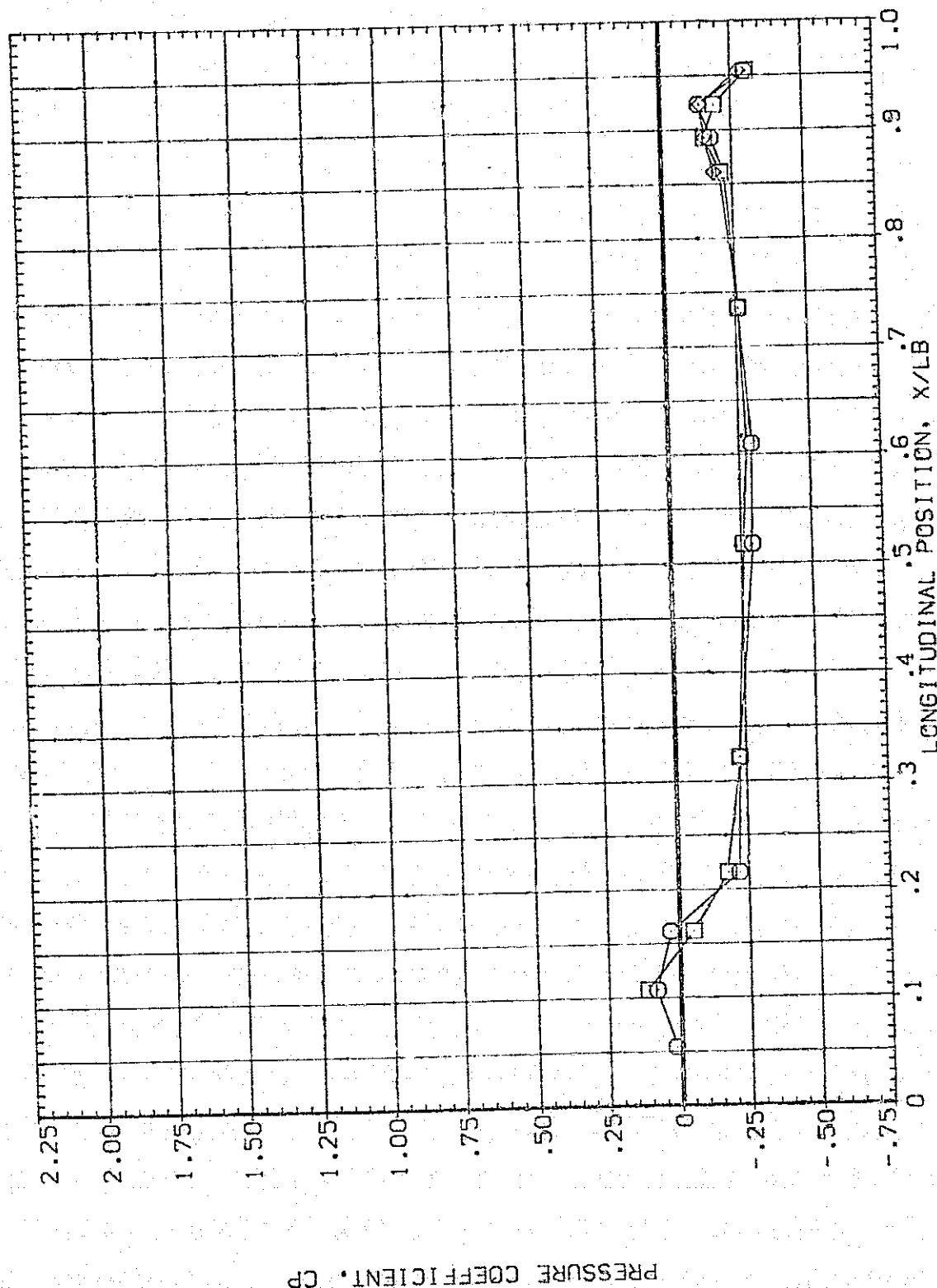


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A020)

SYMBOL  
 ○ □ ◇

THETA 45.000  
 37.500  
 90.000

ALPHA 28.930

MACH 1.960

BETA .000  
 MOUNT 1.000

PARAMETRIC VALUES  
 OFFSET 20.000  
 PHI 90.000

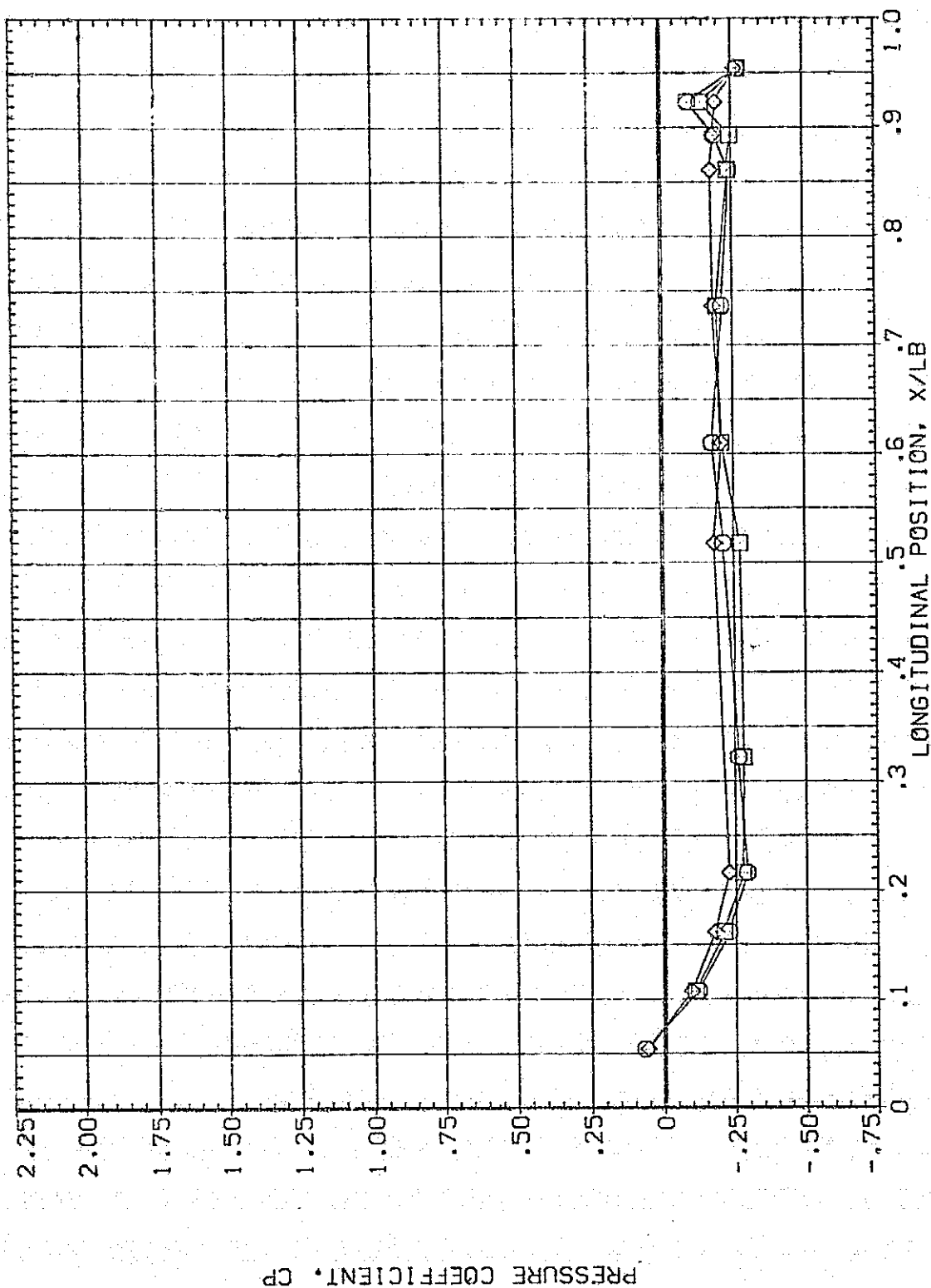


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A020)

SYMBOL THETA ALPHA MACH  
 112.500 28.930 1.960  
 135.000  
 157.500

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 .000 P-1  
 20.000 90.000

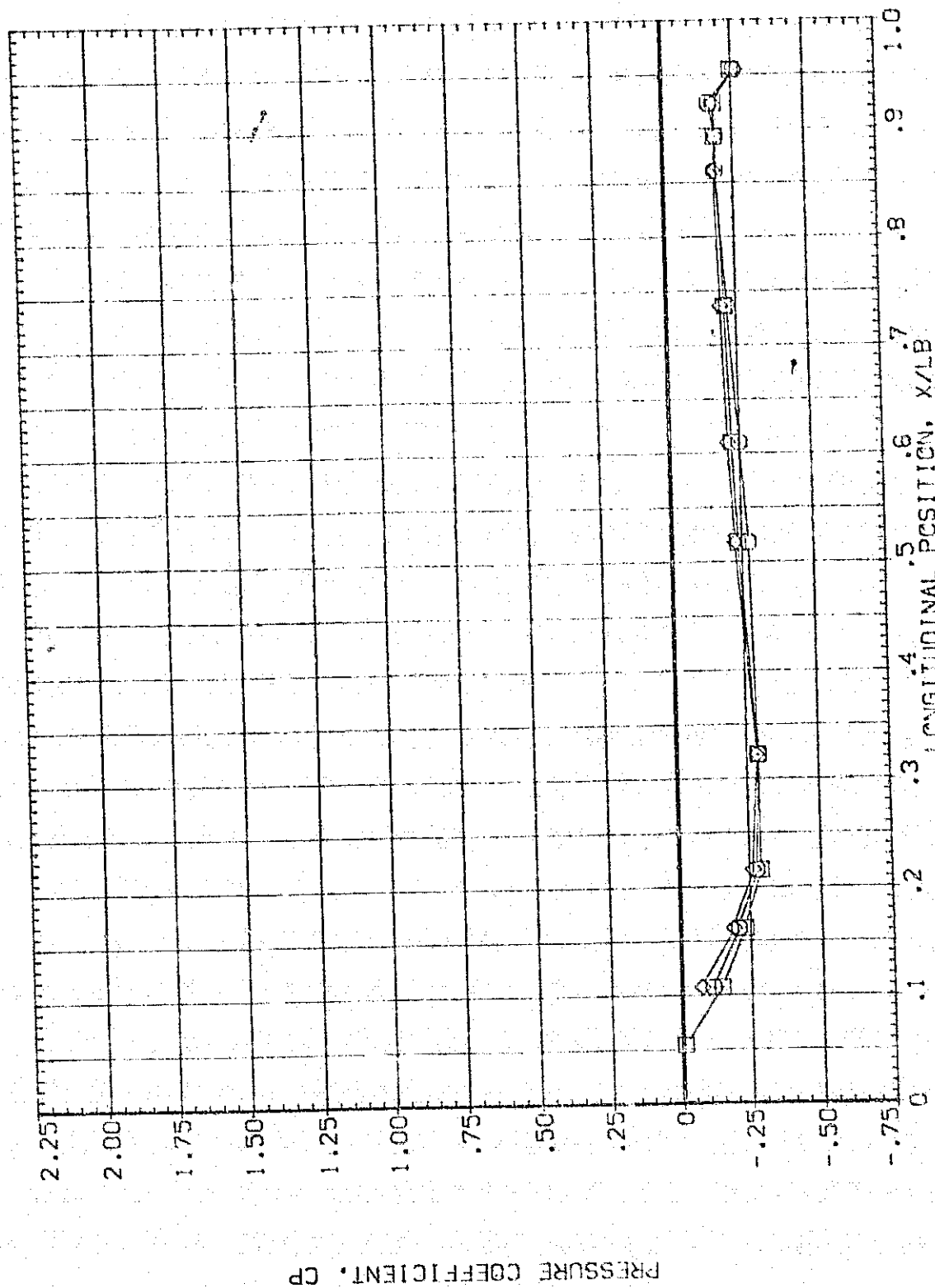


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A020)

SYMBOL  
○  
□  
◇

THETA  
130.000  
232.500  
225.000

ALPHA  
28.930

MACH  
1.960

PARAMETRIC VALUES  
.000 .000  
BETA OFFSET  
MOUNT PHI

20.000  
90.000

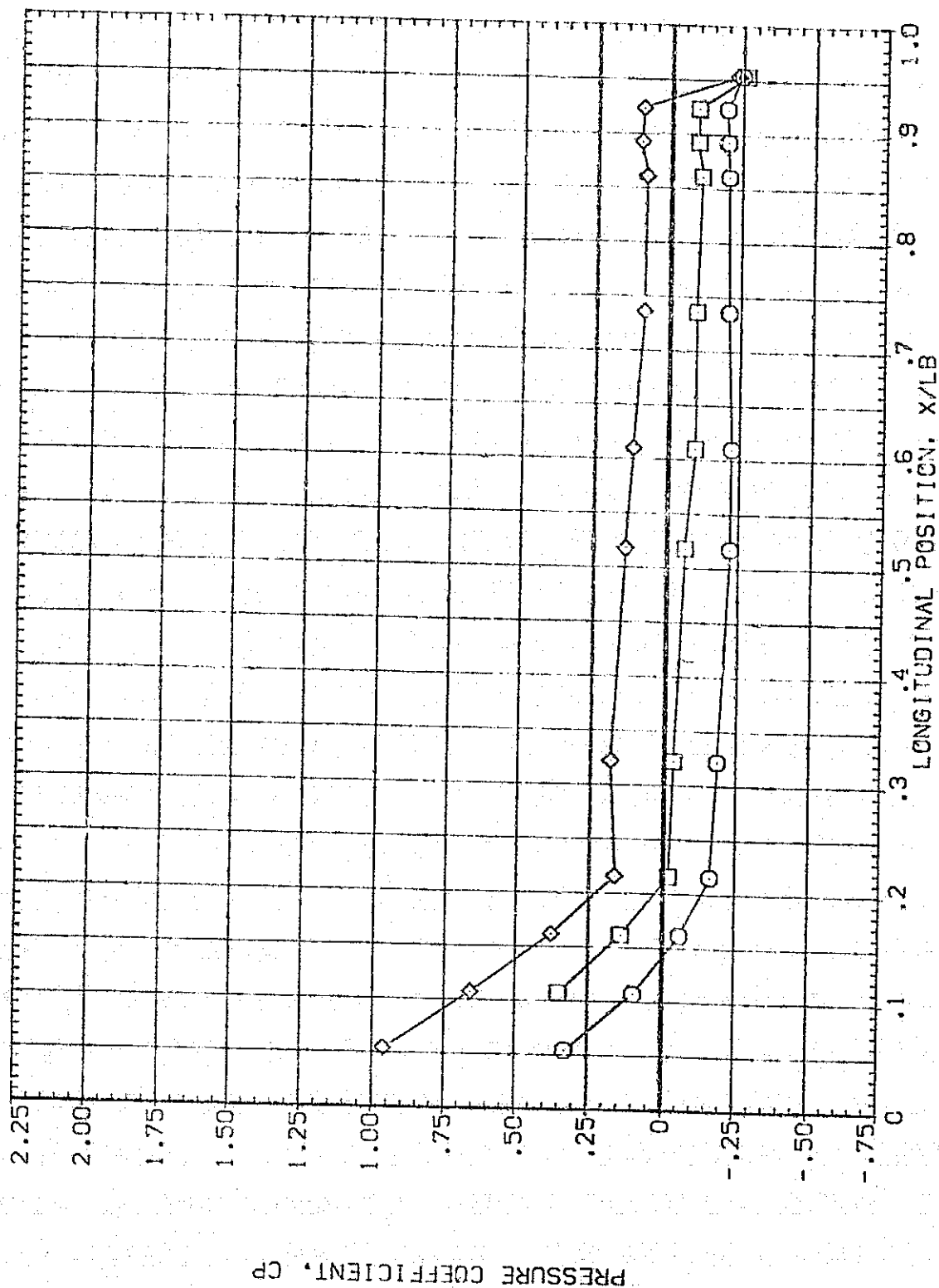


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA020)

SYMBOL THETA ALPHA MACH  
 O 247.500  
 □ 270.000  
 ◇ 292.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PH1 20.000  
 90.000

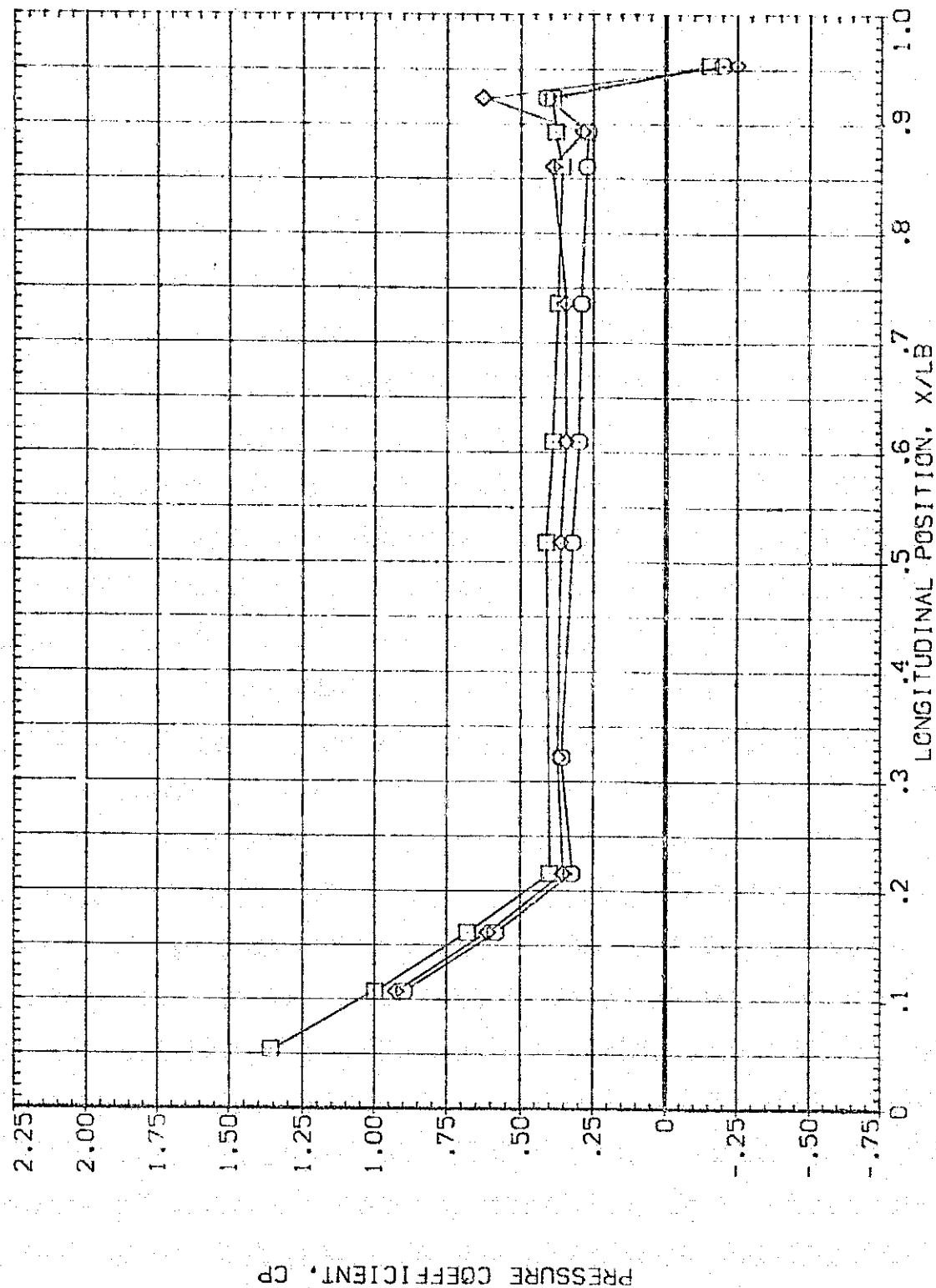


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 O 315.000 28.930 1.960  
 □ 326.000  
 ◇ 346.000

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MCUNT 1.000 PHI 90.000

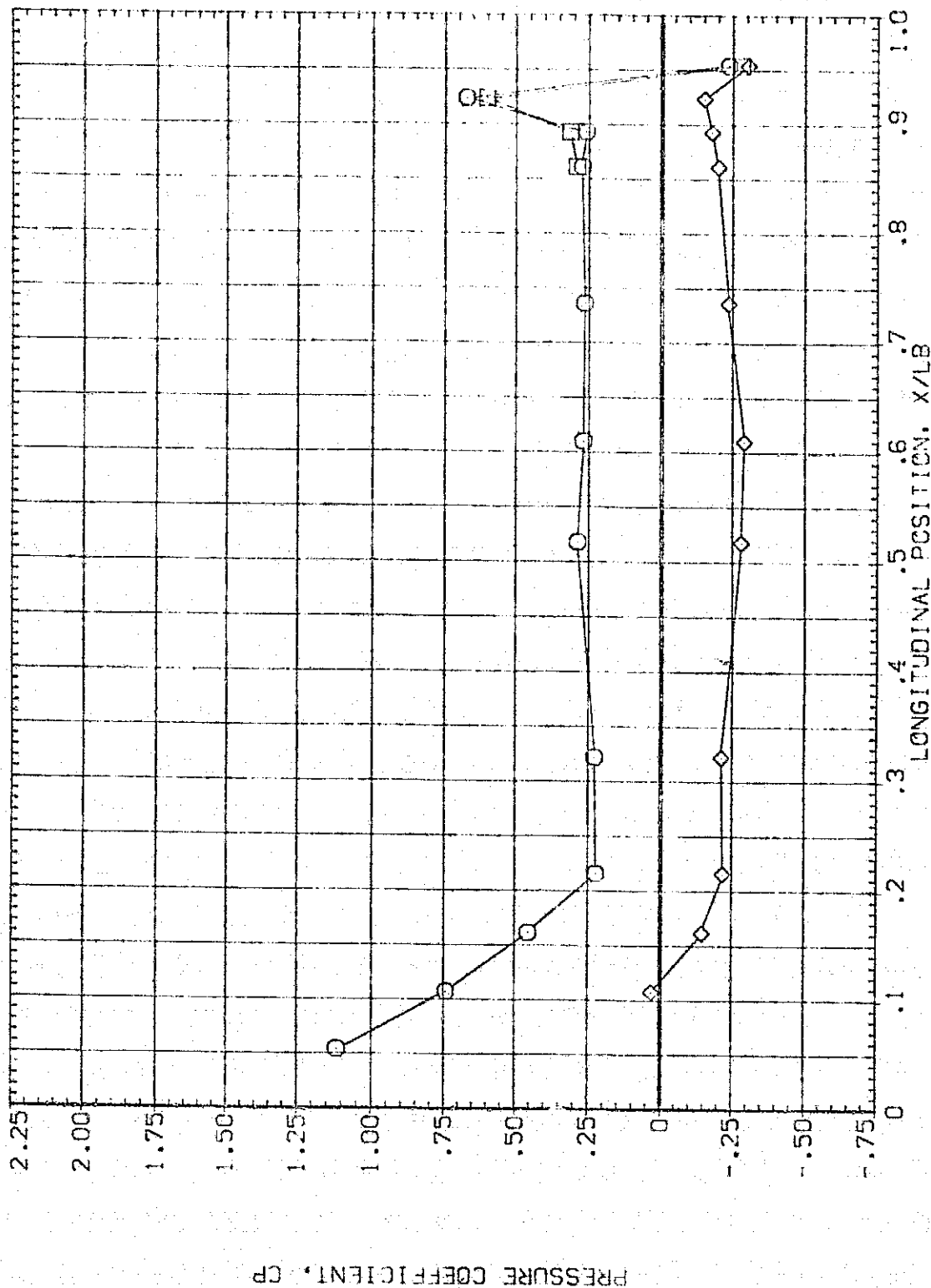


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

(PIAO31)

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

PARAMETRIC VALUES  
 .000 .000  
 OFFSET PHI  
 180.000

ALPHA MACH  
 -8.380 1.960

THE TA  
 .000  
 14.000  
 24.000

SYMBOL  
 ○ □ ◇

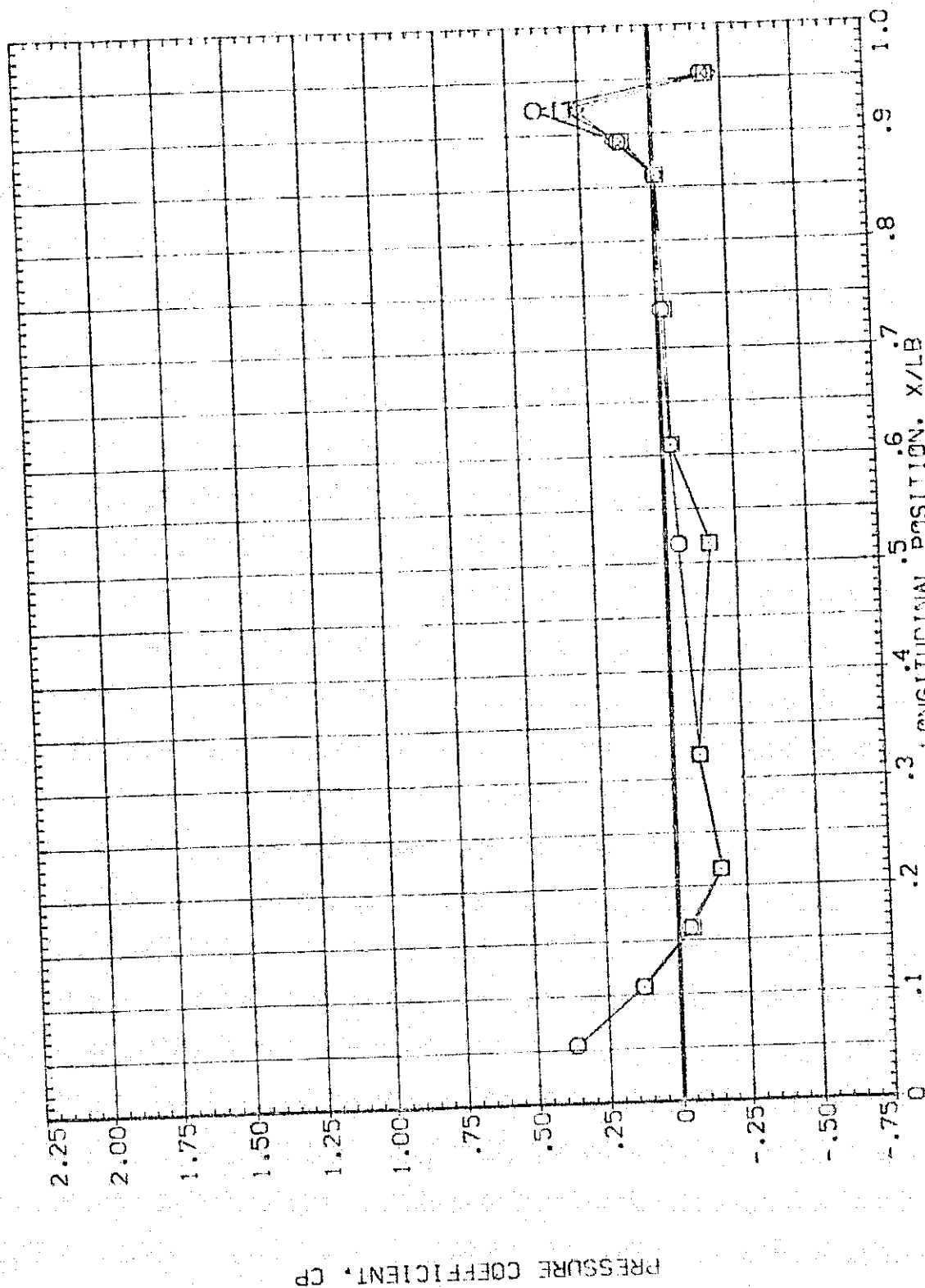


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	45.000	-8.380	1.950	MOUNT	.000 OFFSET
□	57.500				1.000 PH?
◇	90.000				180.000

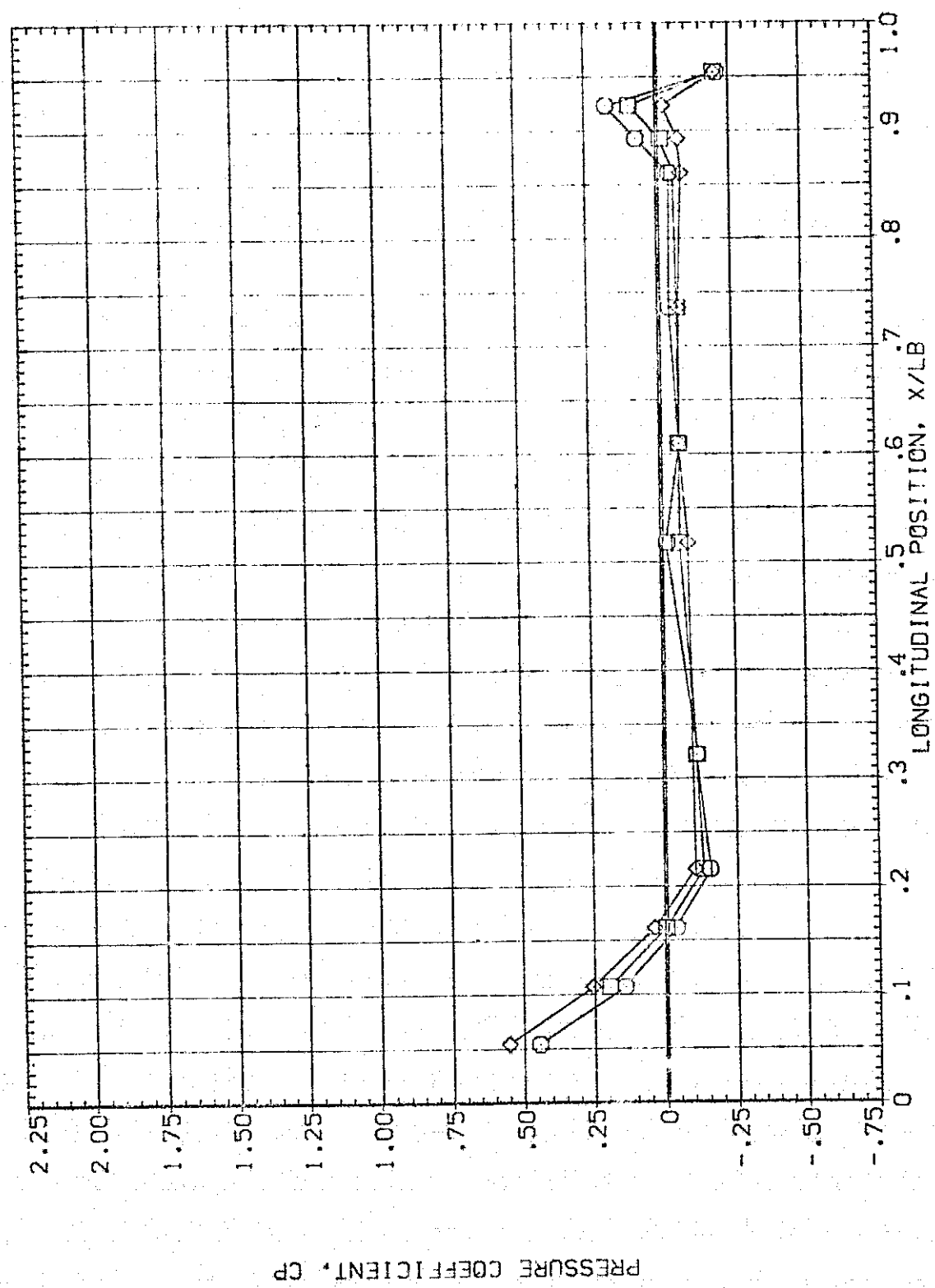


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA031)

SYMBOL THETA ALPHA MACH  
 O 112.500 -8.380 1.960  
 □ 135.000  
 ◇ 157.500

PARAMETRIC VALUES  
 BETA .000 OFFSET .000  
 MOUNT 1.000 PH: 180.000

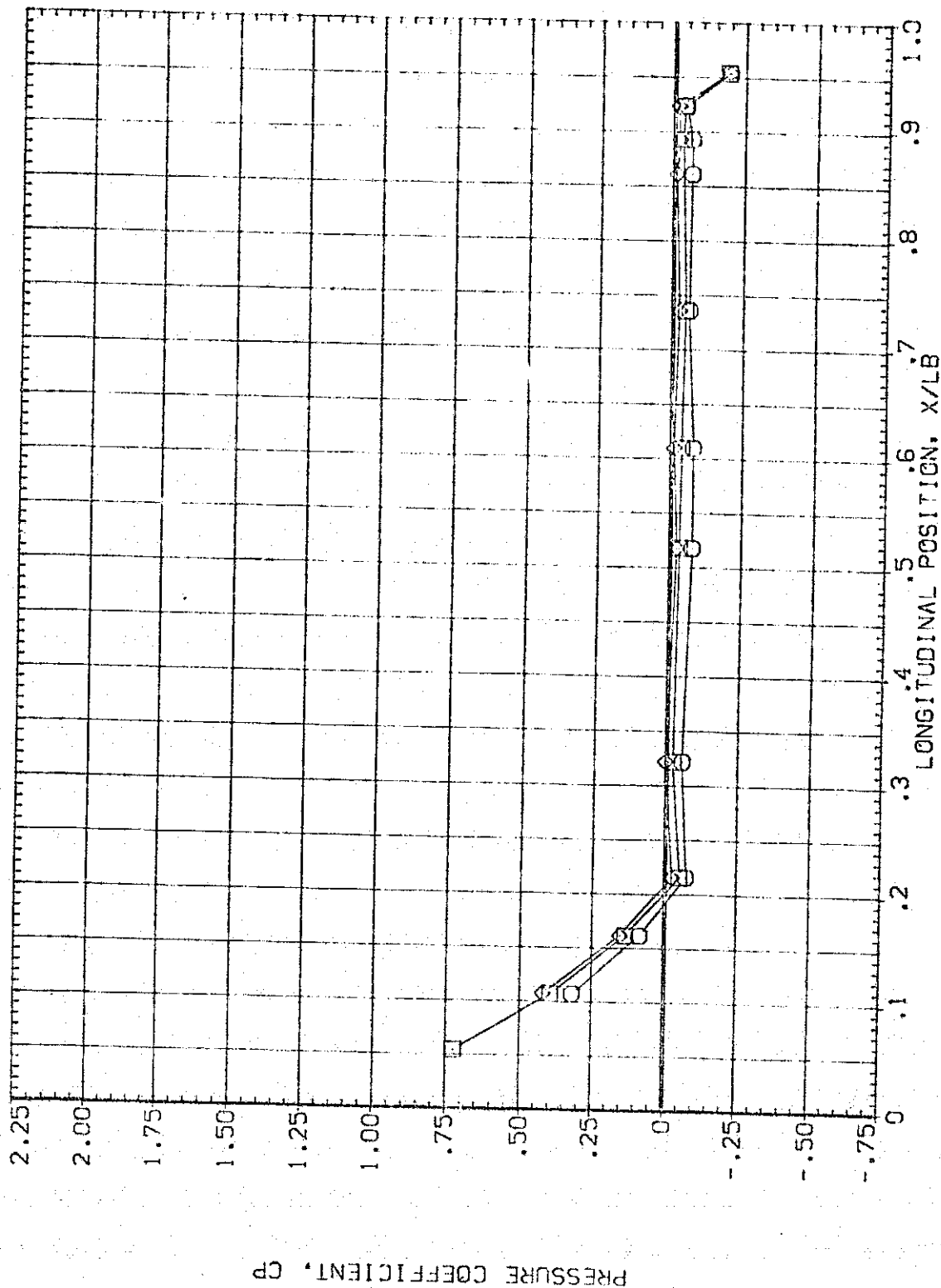


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T: (P1A031)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	
○	190.000	-8.380	1.950	.000	.000	.000
□	232.500			1.000	PHI	180.000
◇	225.000					

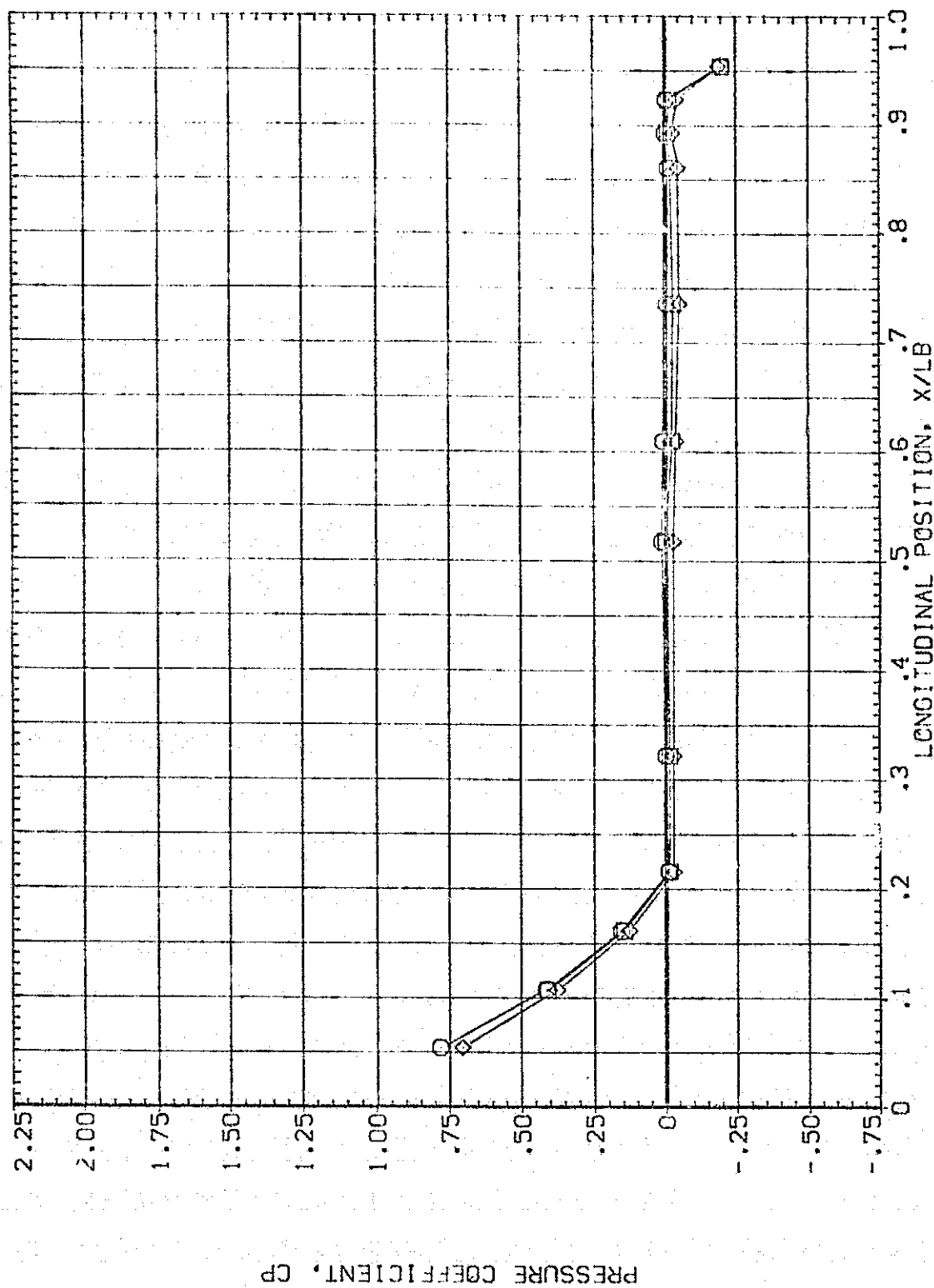


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA031)

SYMBOL    THETA    ALPHA    MACH

○    247.500    -8.380    1.950

□    270.000

◇    292.500

PARAMETRIC VALUES

.000    OFFSET    .000

1.000    PHI    180.000

BETA

MOUNT

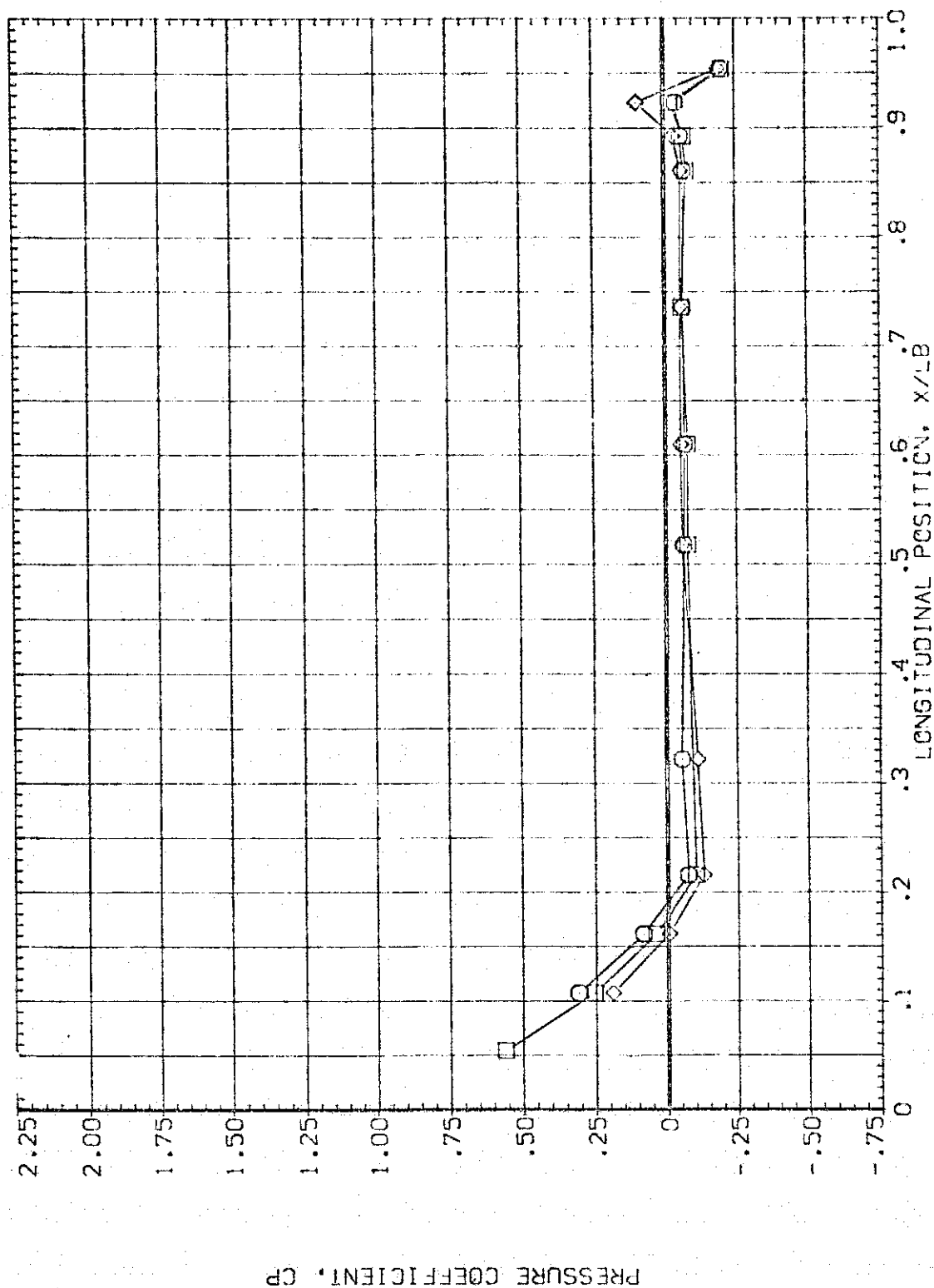


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA031)

SYMBOL THETA ALPHA MACH  
 O 315.000 -8.380 1.960  
 □ 326.000  
 ◇ 346.000

PARAMETRIC VALUES  
 BETA .000 OFFSET .000  
 MOUNT 1.000 PHI 30.000

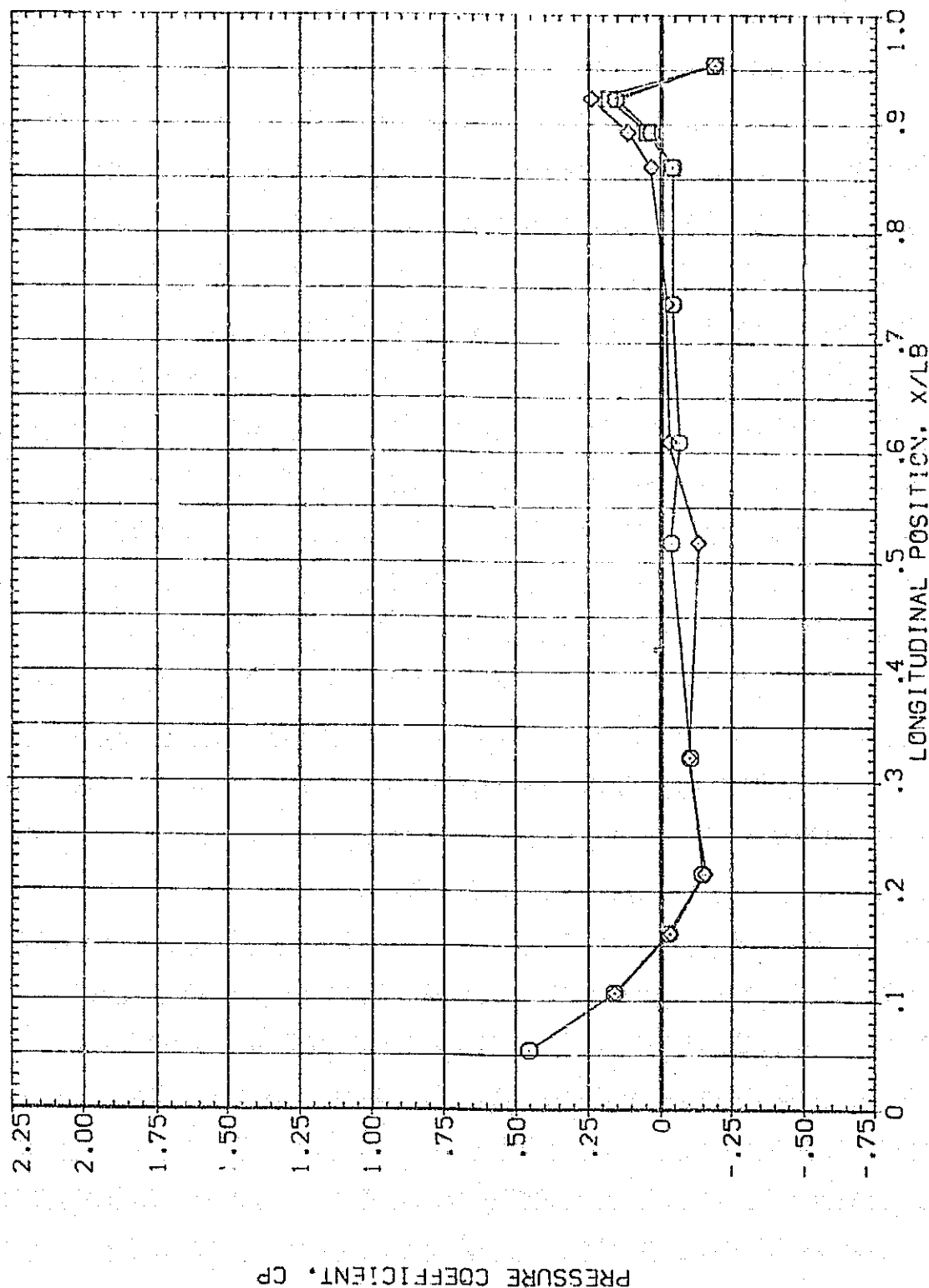


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (PIA032)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 -4.330

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 180.000

OFFSET  
 PHI

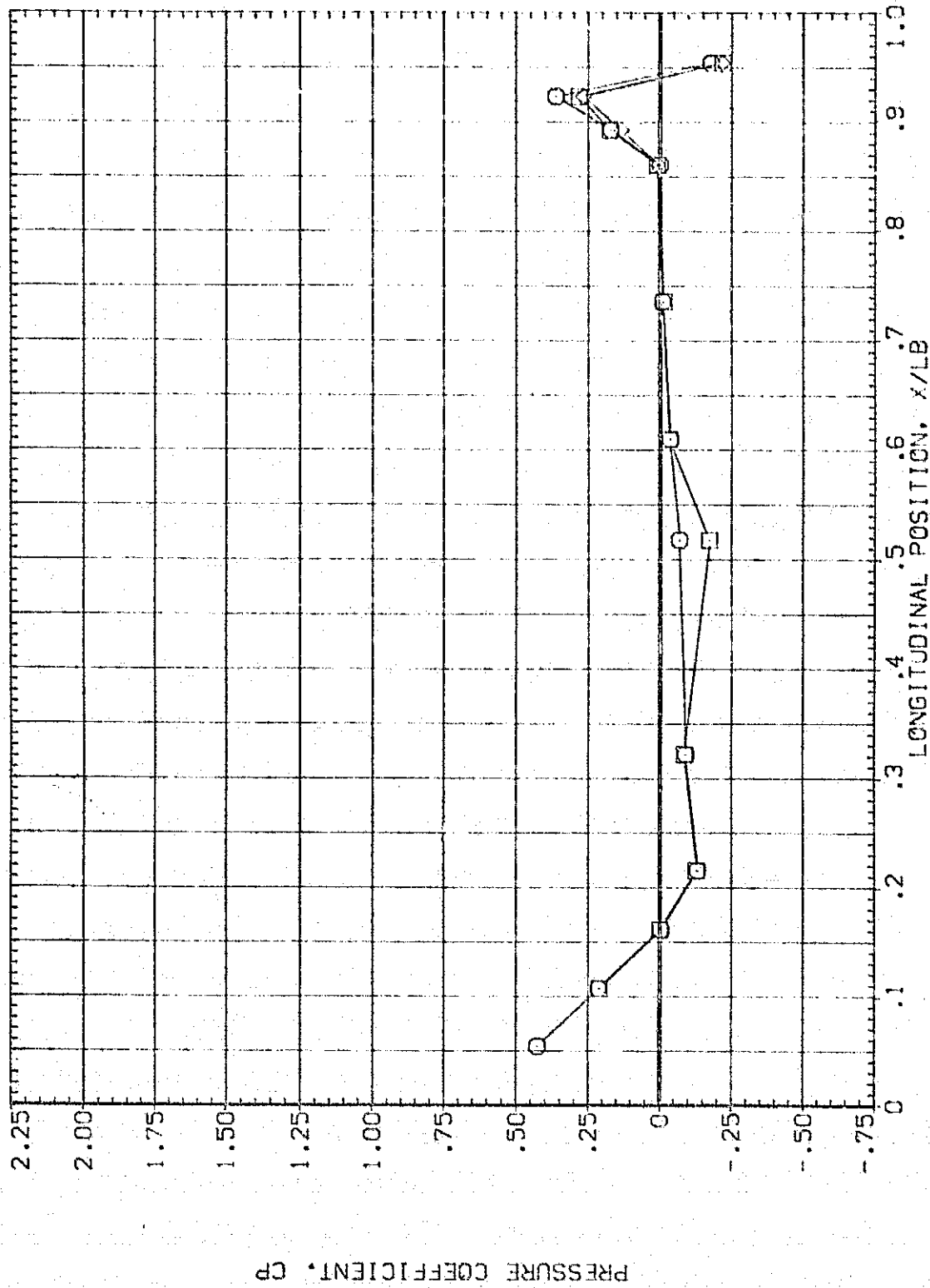


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

(P1A032)

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL  
◇  
□  
○

THETA  
45,000  
57,500  
90,000

ALPHA  
-4.330

MACH  
1.960

PARAMETRIC VALUES  
BETA  
MOUNT  
.000  
1.000  
PHI  
.000  
180.000

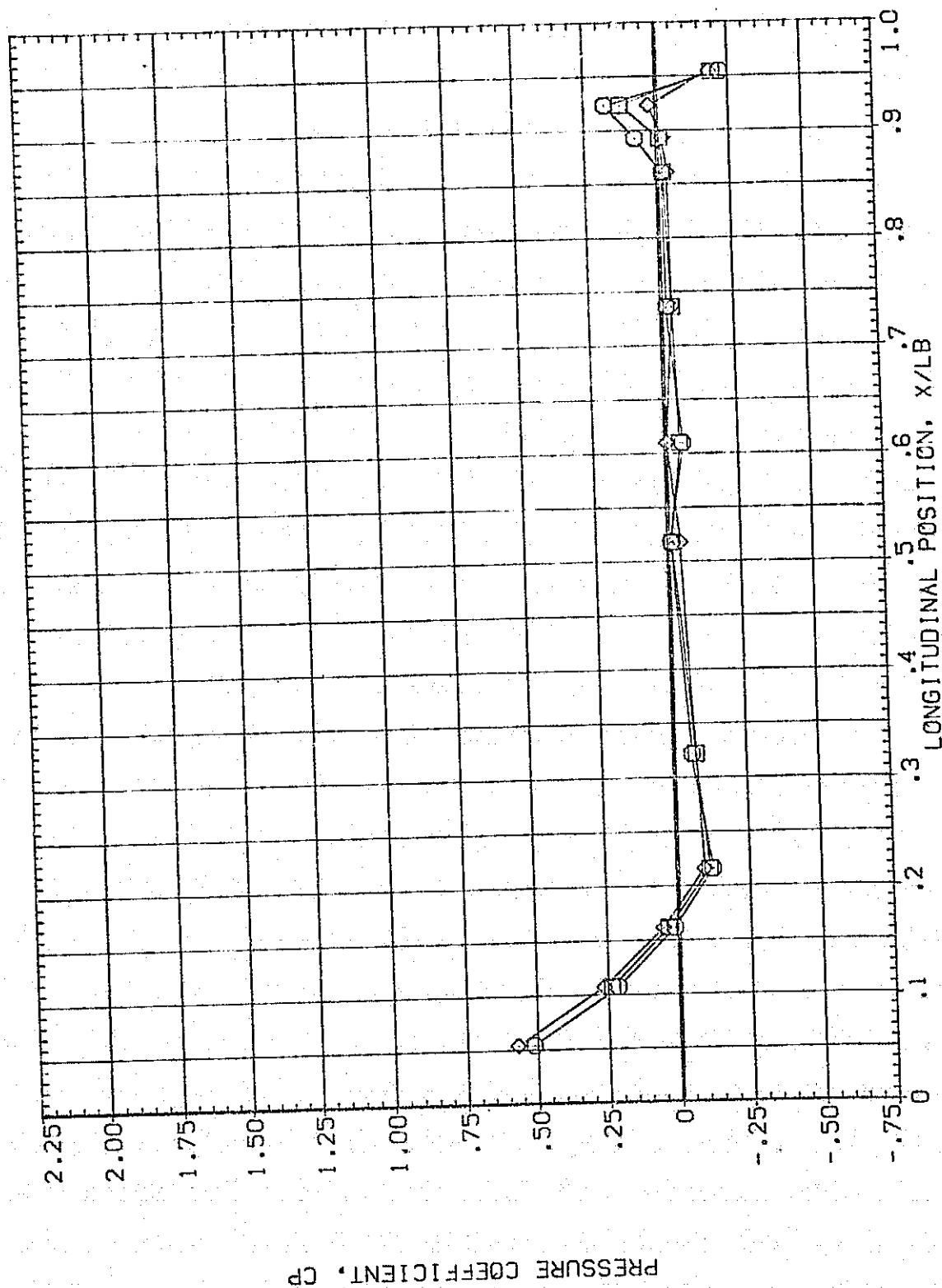


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A032)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	.000	OFFSET
○	112.500	-4.330	1.960	NDUNT	1.000	PHI
□	135.000					180.000
◇	157.500					

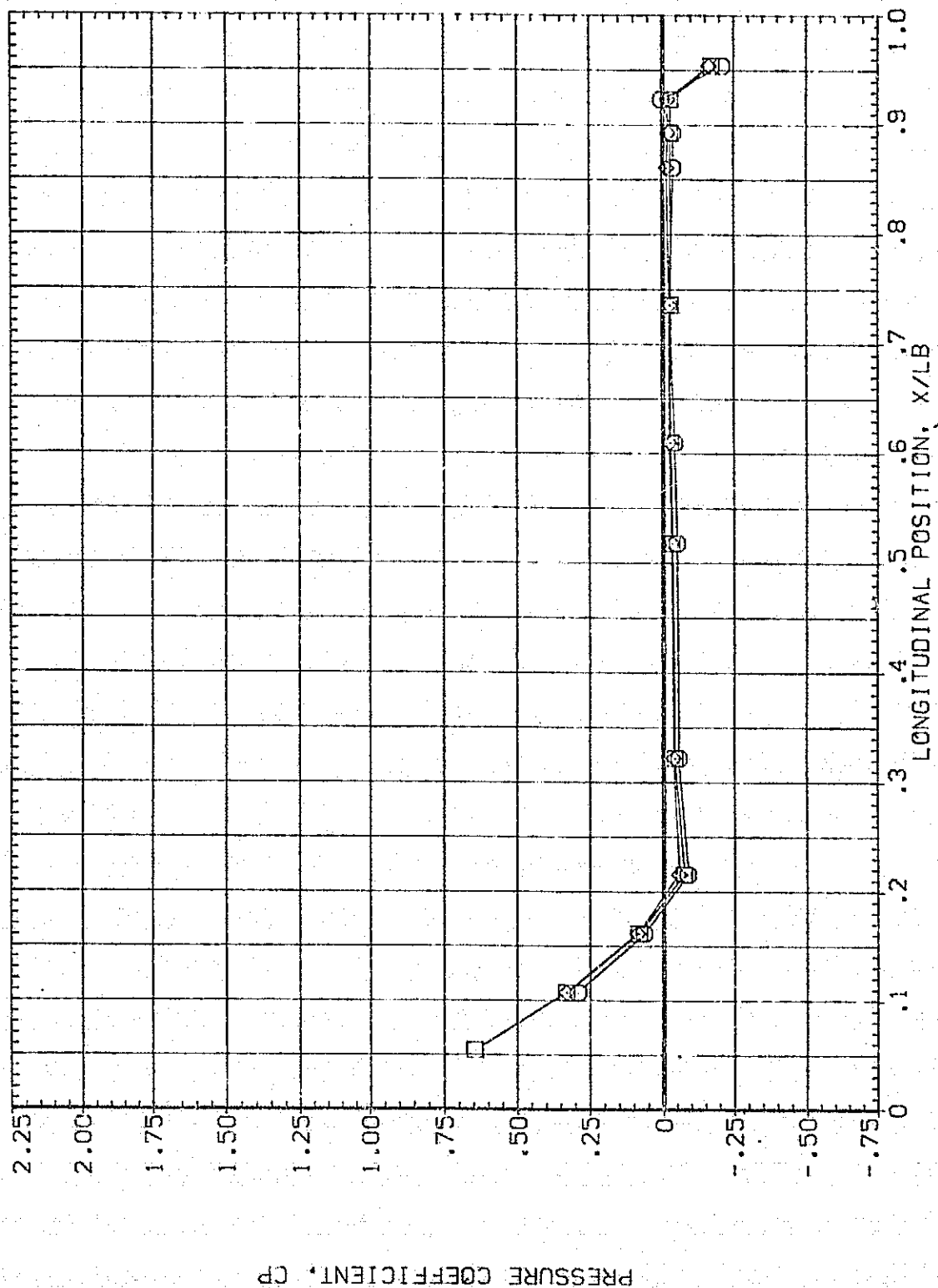


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

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ORIGINAL PAGE IS POOR

SYMBOL  
 □  
 ◇

THETA  
 190.000  
 202.500  
 225.000

ALPHA  
 -4.330

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 180.000

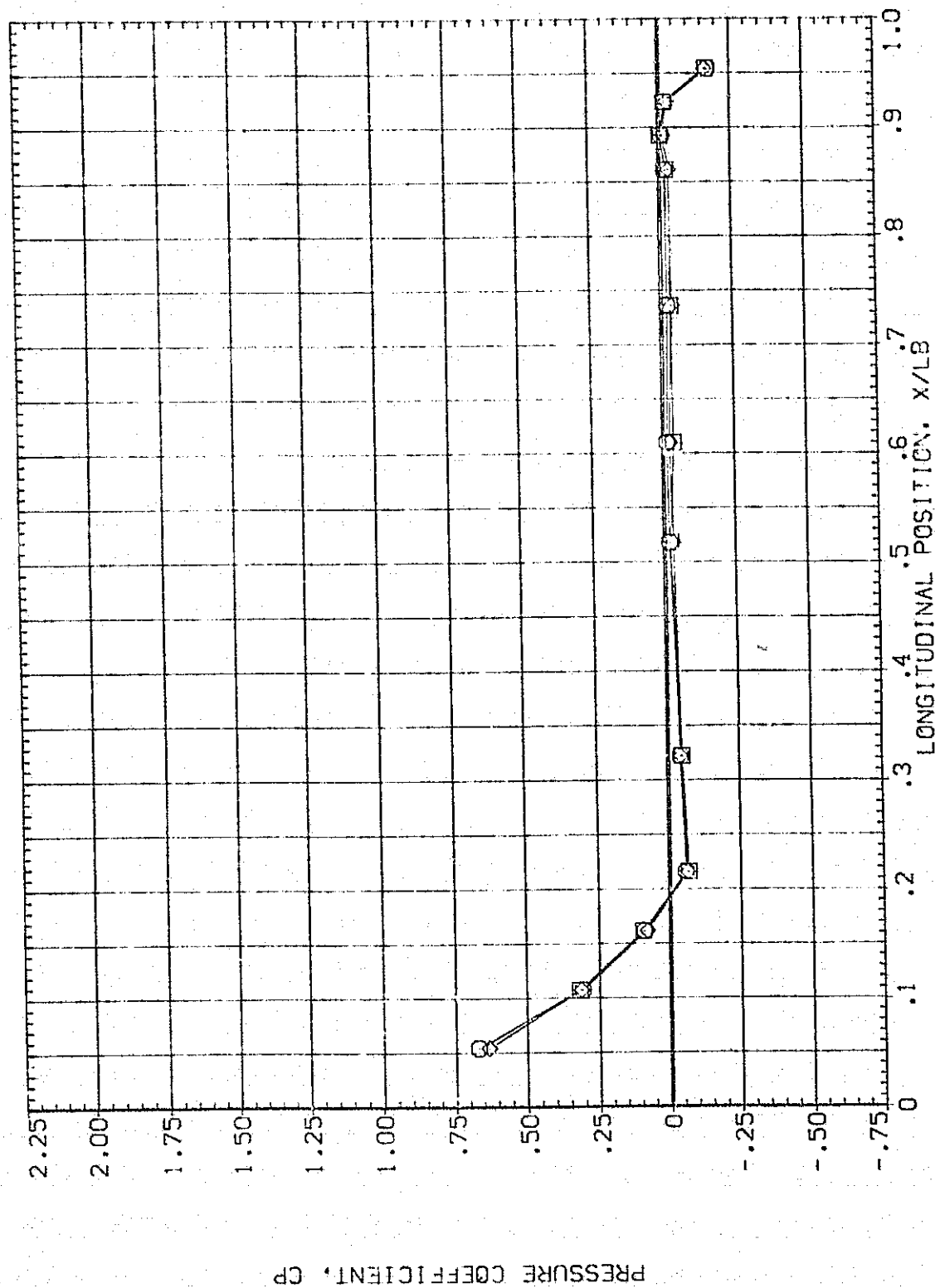


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 [P1A032]

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	.000
○	247.500	-4.330	1.960	PHI	180.000	
□	270.000					
◇	292.500					

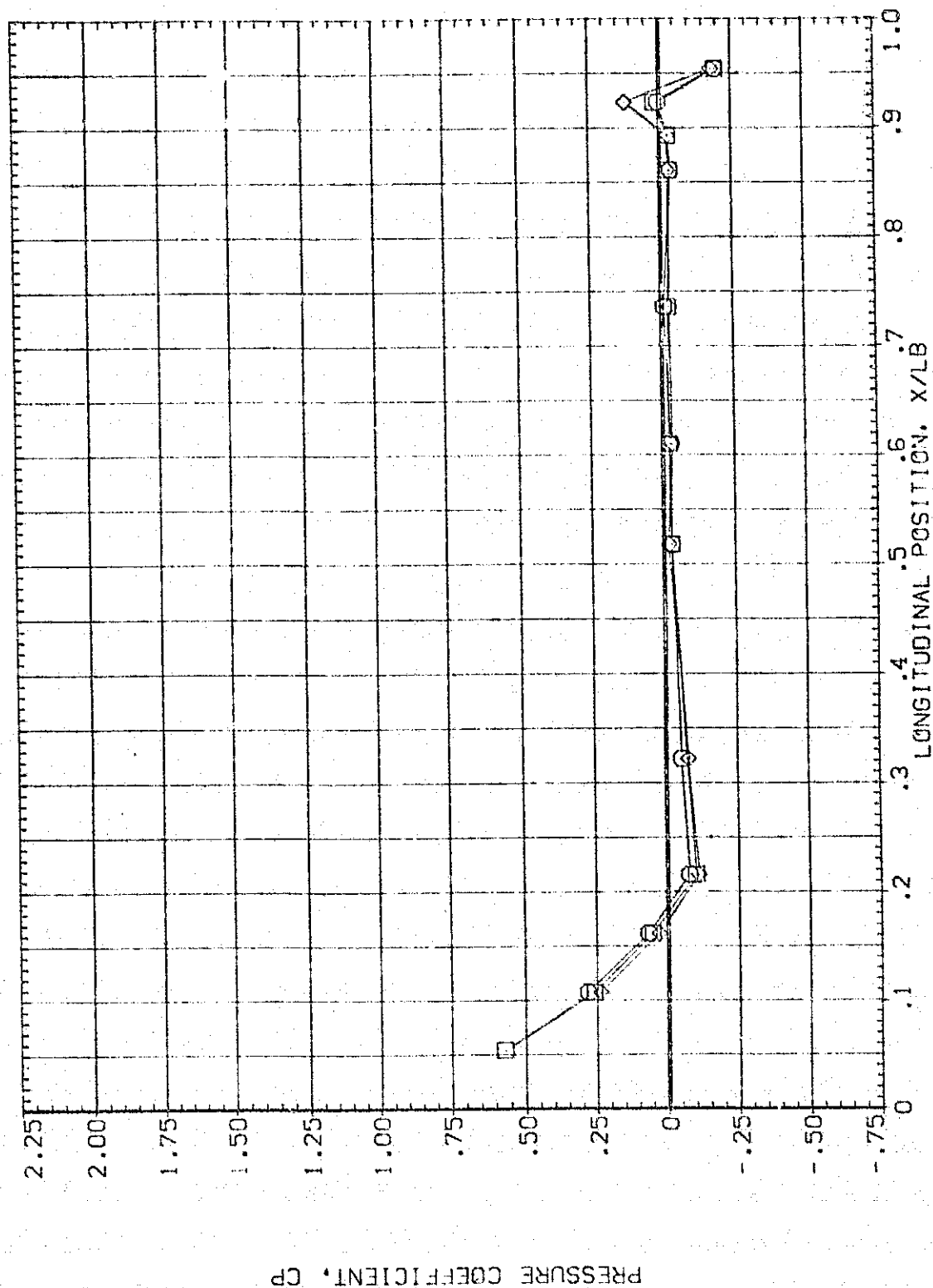


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○ □ ◇

THETA 315.000  
 ALPHA -4.330  
 MACH 1.960

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 180.000

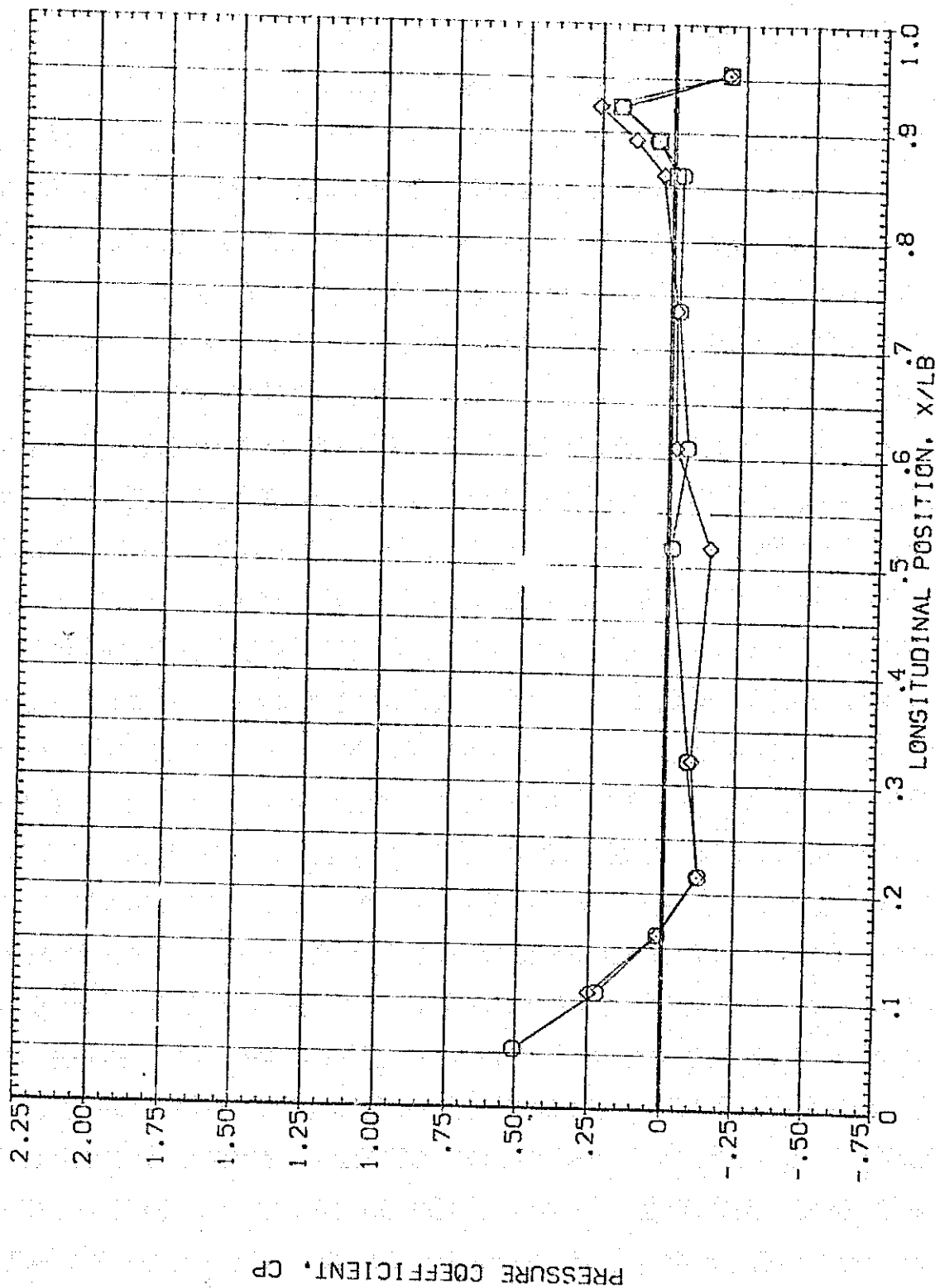


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A033)

PARAMETRIC VALUES  
 BETA .000  
 MCUNT 1.000  
 OFFSET PHI 180.000

SYMBOL THETA ALPHA MACH  
 14.000 .280 1.960  
 24.000

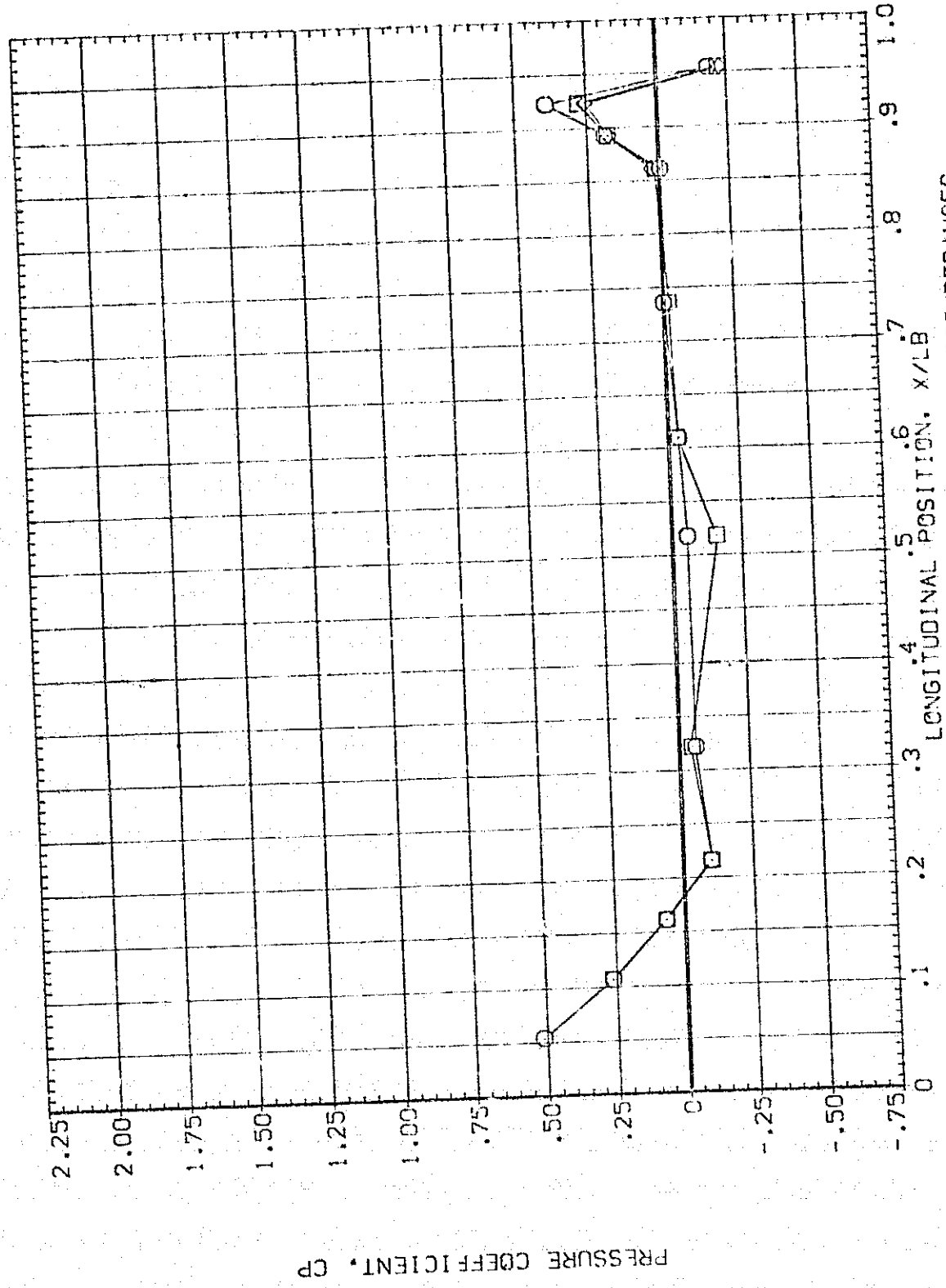


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 O 45.000 - .280 1.960  
 □ 37.500  
 ◇ 30.000

PARAMETRIC VALUES  
 BETA .000 OFFSET .000  
 MOUNT 1.000 P-1 180.000

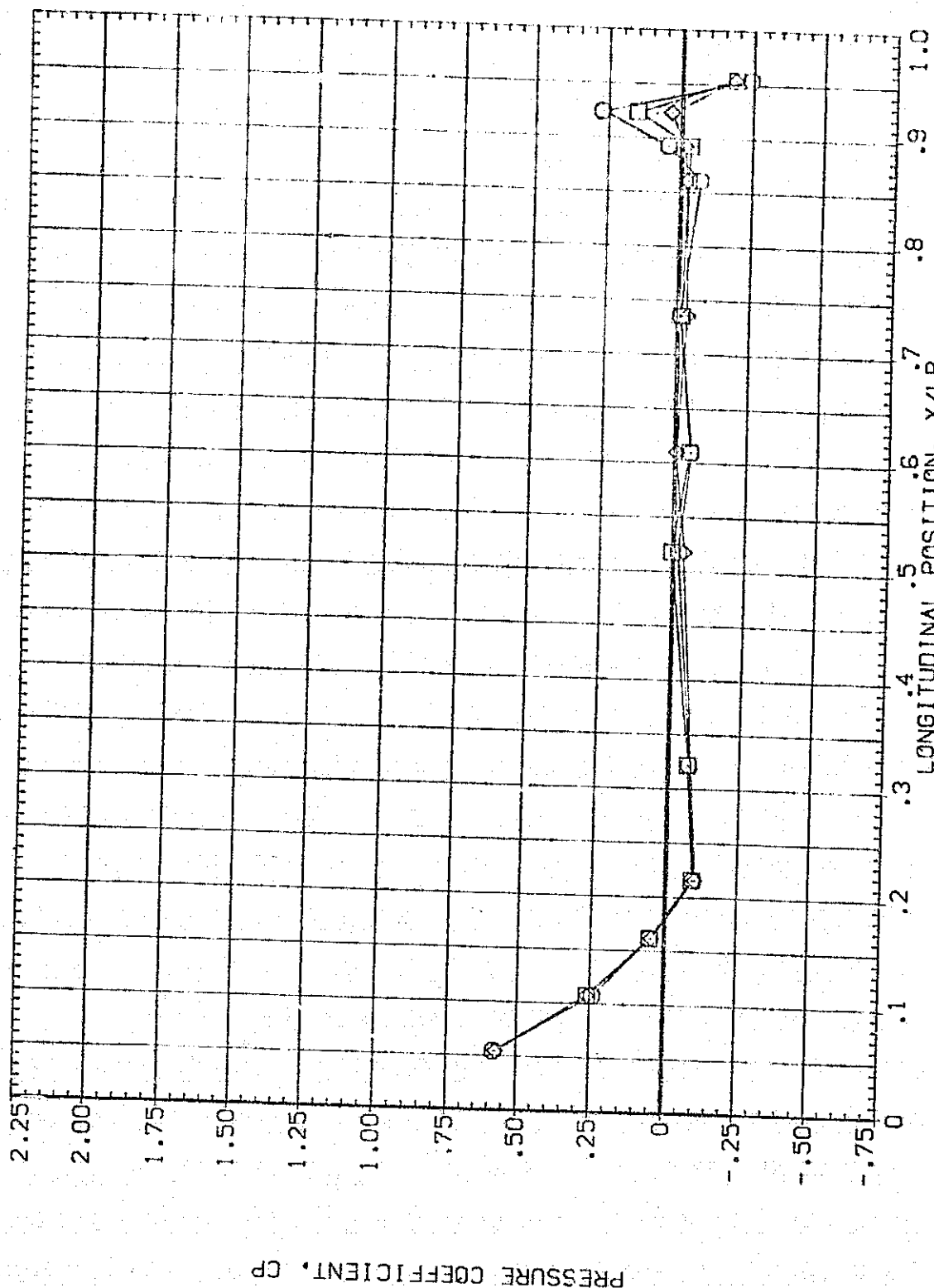


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA033)

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 180.000

BETA  
 MOUNT

MACH  
 1.960

ALPHA  
 -.280

THETA  
 112.500  
 135.000  
 157.500

SYMBOL  
 □  
 ◇

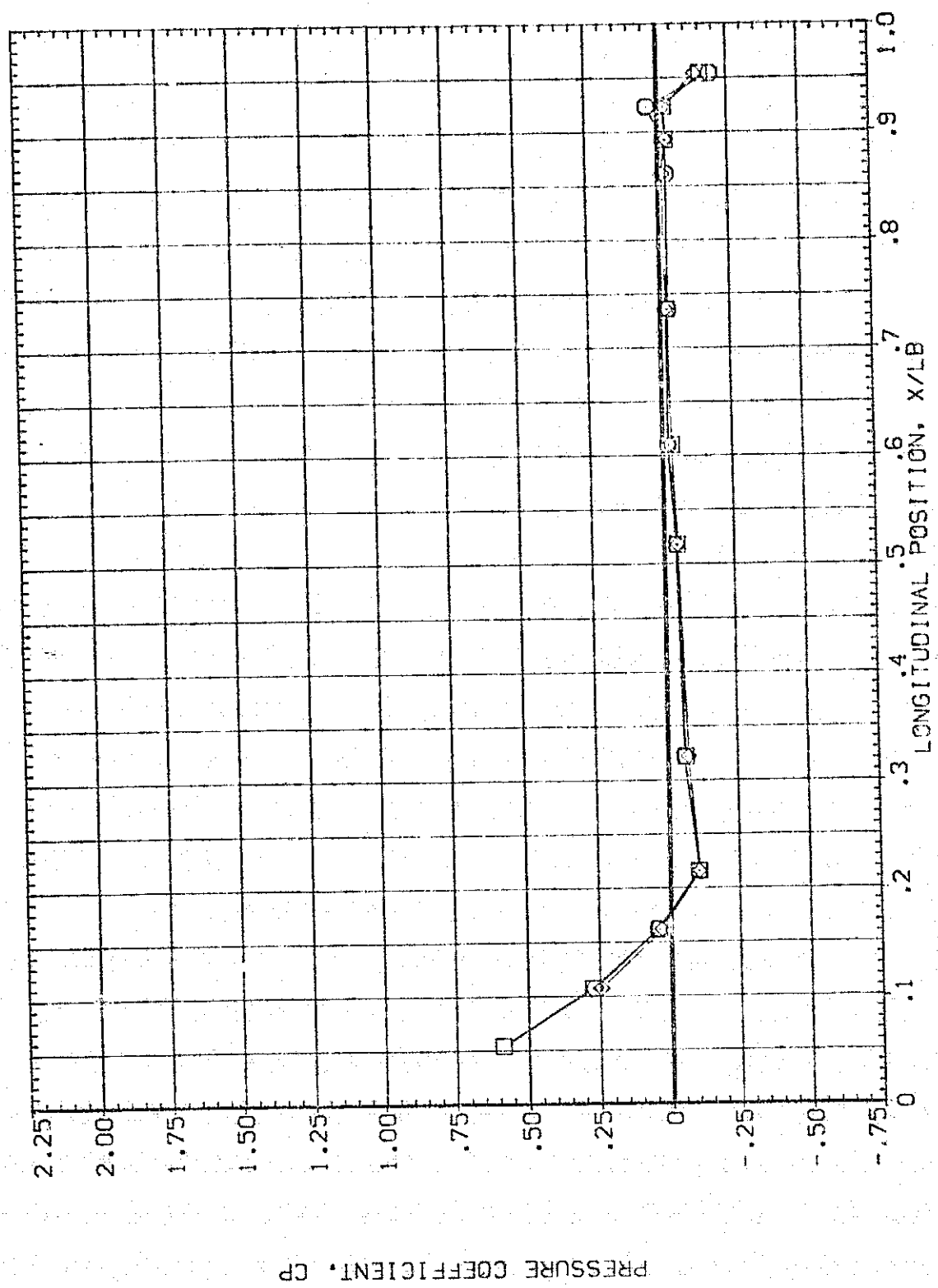


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
BETA .000  
HOUNT 1.000  
PHI 180.000

THETA ALPHA MACH  
190.000 -.280 1.960  
202.500  
225.000

SYMBOL  
□  
◇

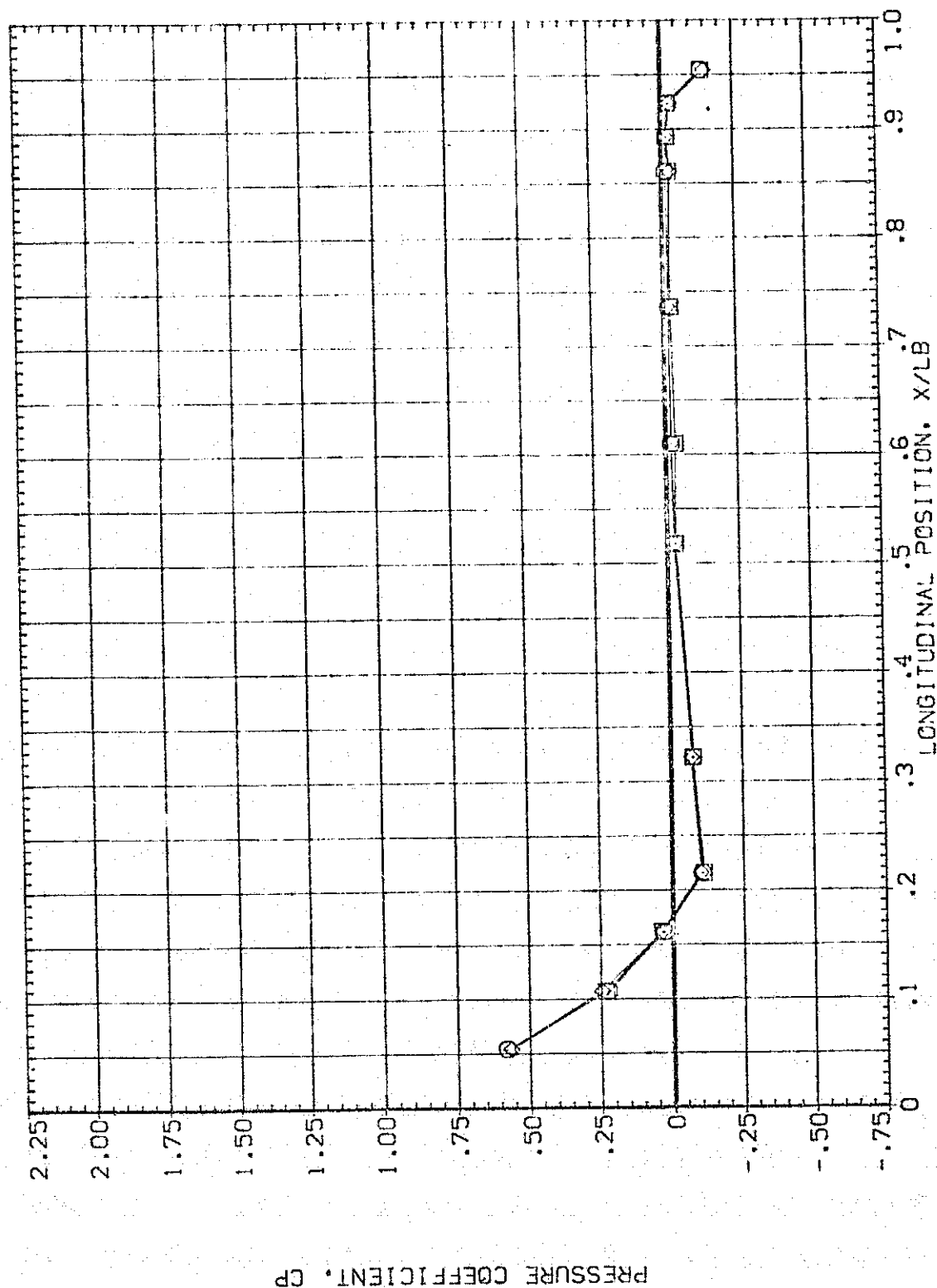


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA033)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
	247.500	-.280	1.960	BETA	.000	OFFSET
	270.000			MOUNT	1.000	PHI
	292.500					180.000

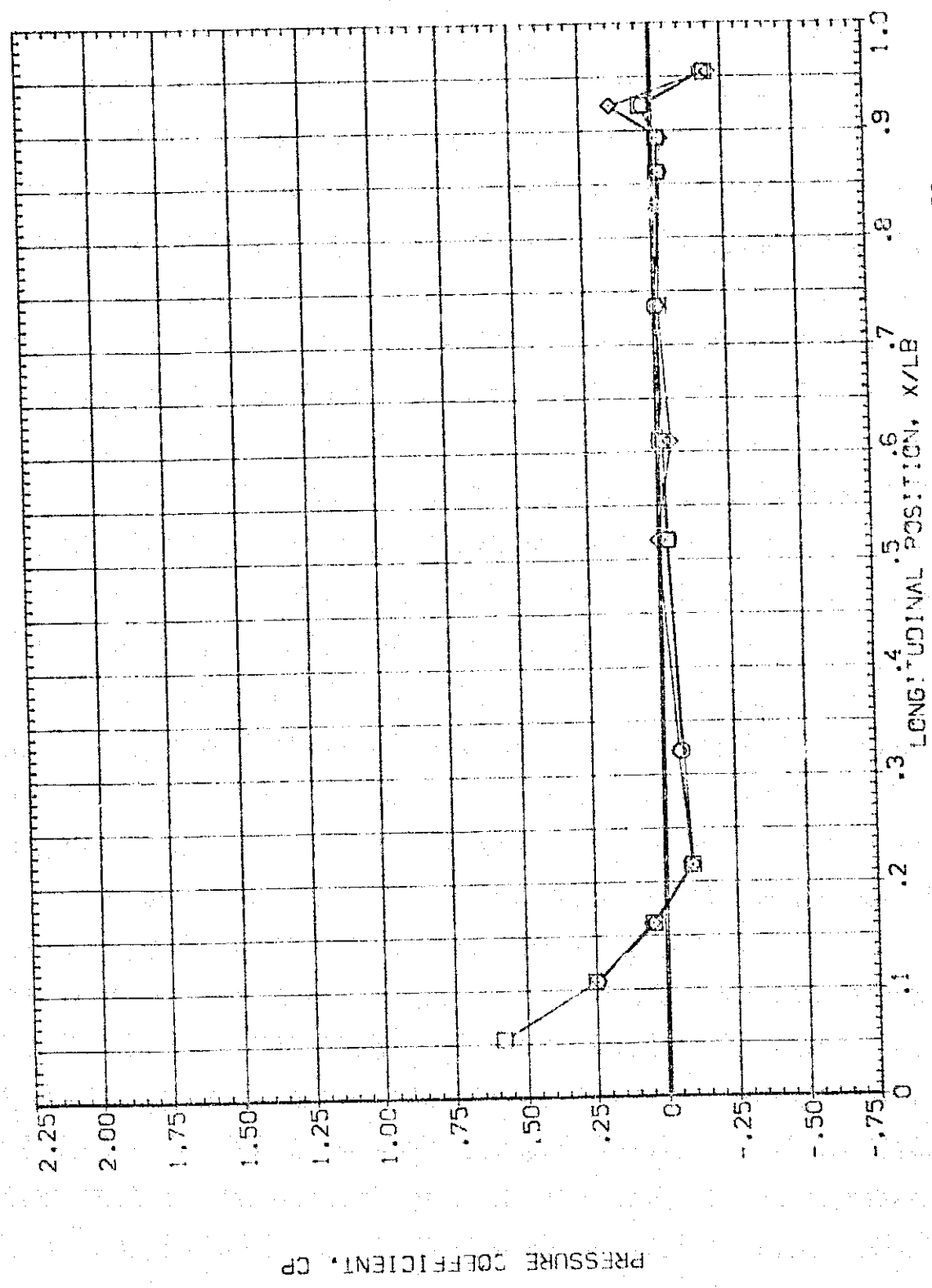


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
○  
□  
◇

THETA  
315.000  
326.000  
346.000

ALPHA  
-.280

MACH  
1.960

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
180.000  
-000

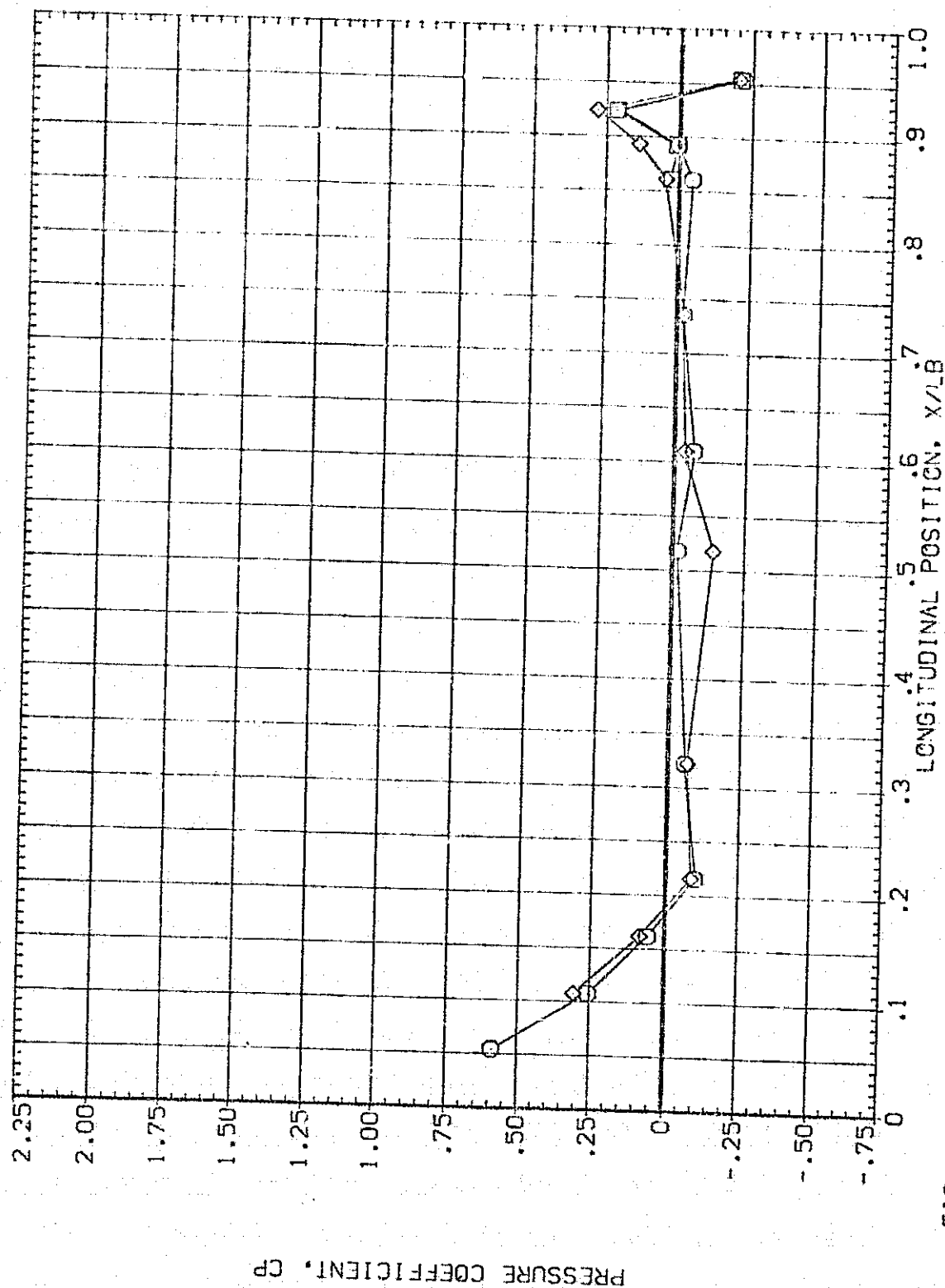


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A034)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 3.770

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 180.000  
 OFFSET  
 PHI

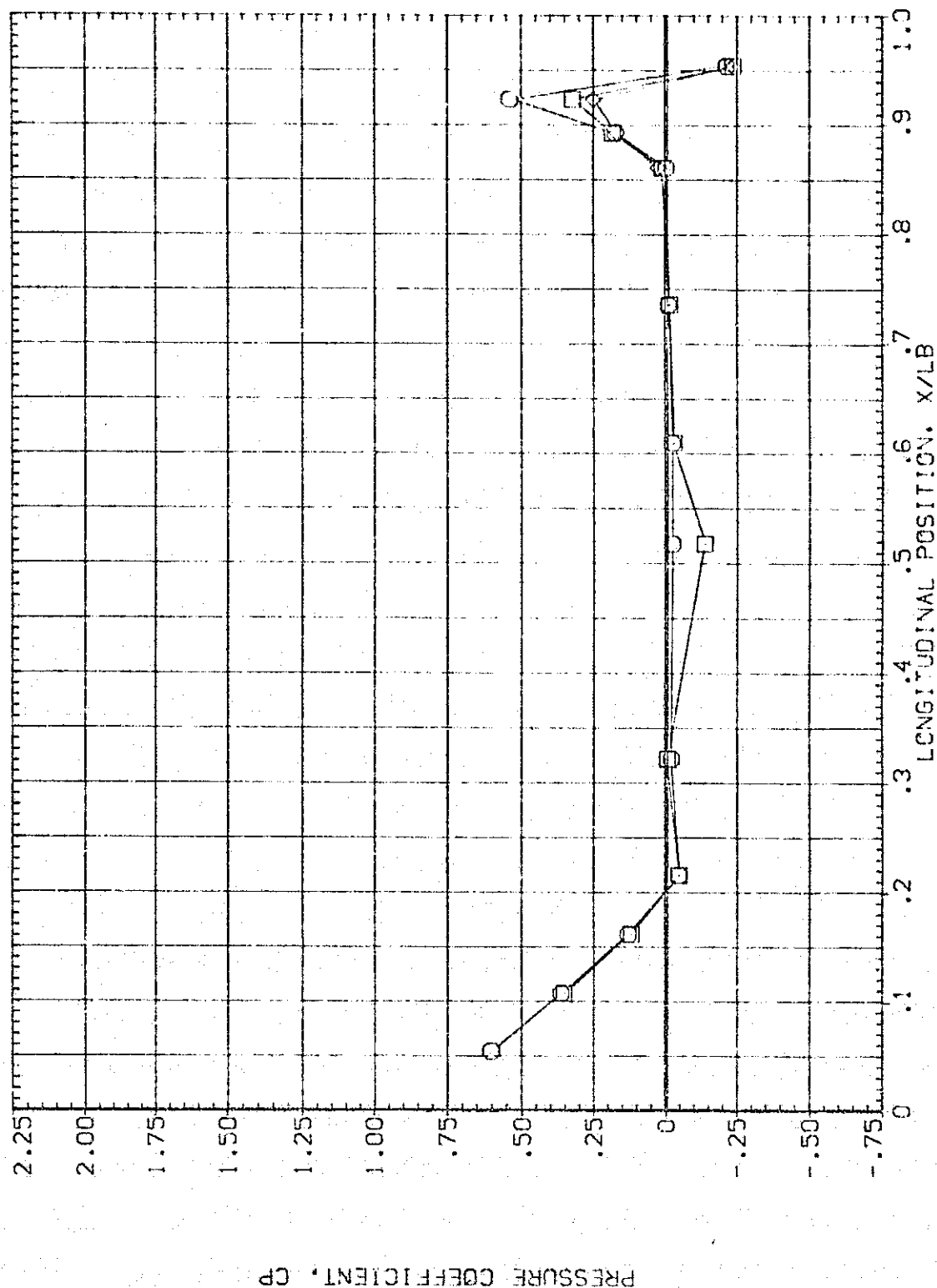


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSEC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL	THETA	ALPHA	MACH
○	45.000	3.770	1.960
□	57.500		
◇	90.000		

PARAMETRIC VALUES	
.000	OFFSET
1.000	PHI
.000	
180.000	

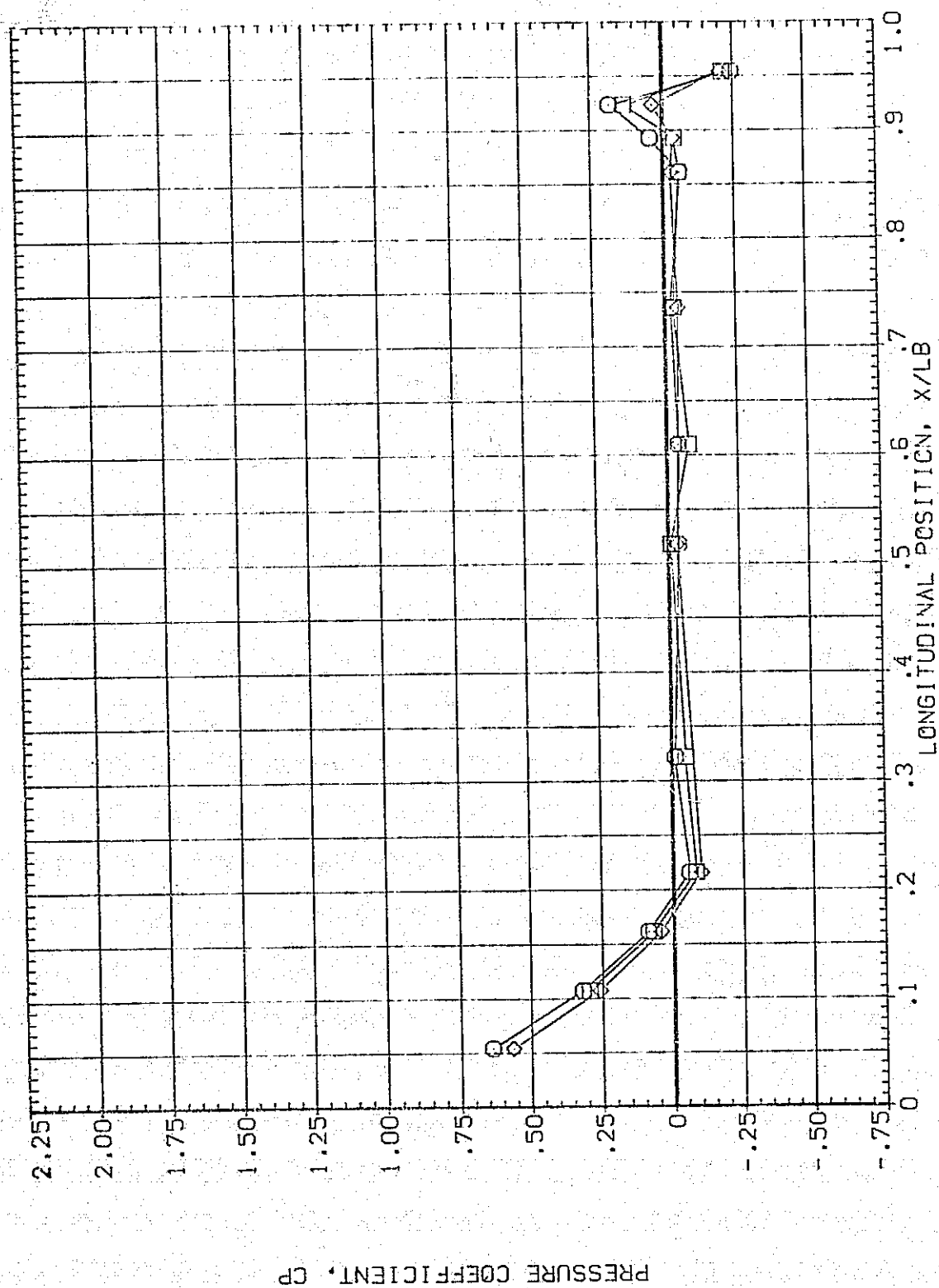


FIG. 4. PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A034)

SYMBOL	THETA	ALPHA	MACH
○	112.500	3.770	1.960
□	135.000		
◇	157.500		

PARAMETRIC VALUES		
BETA	OFFSET	PHI
1.000	.000	180.000

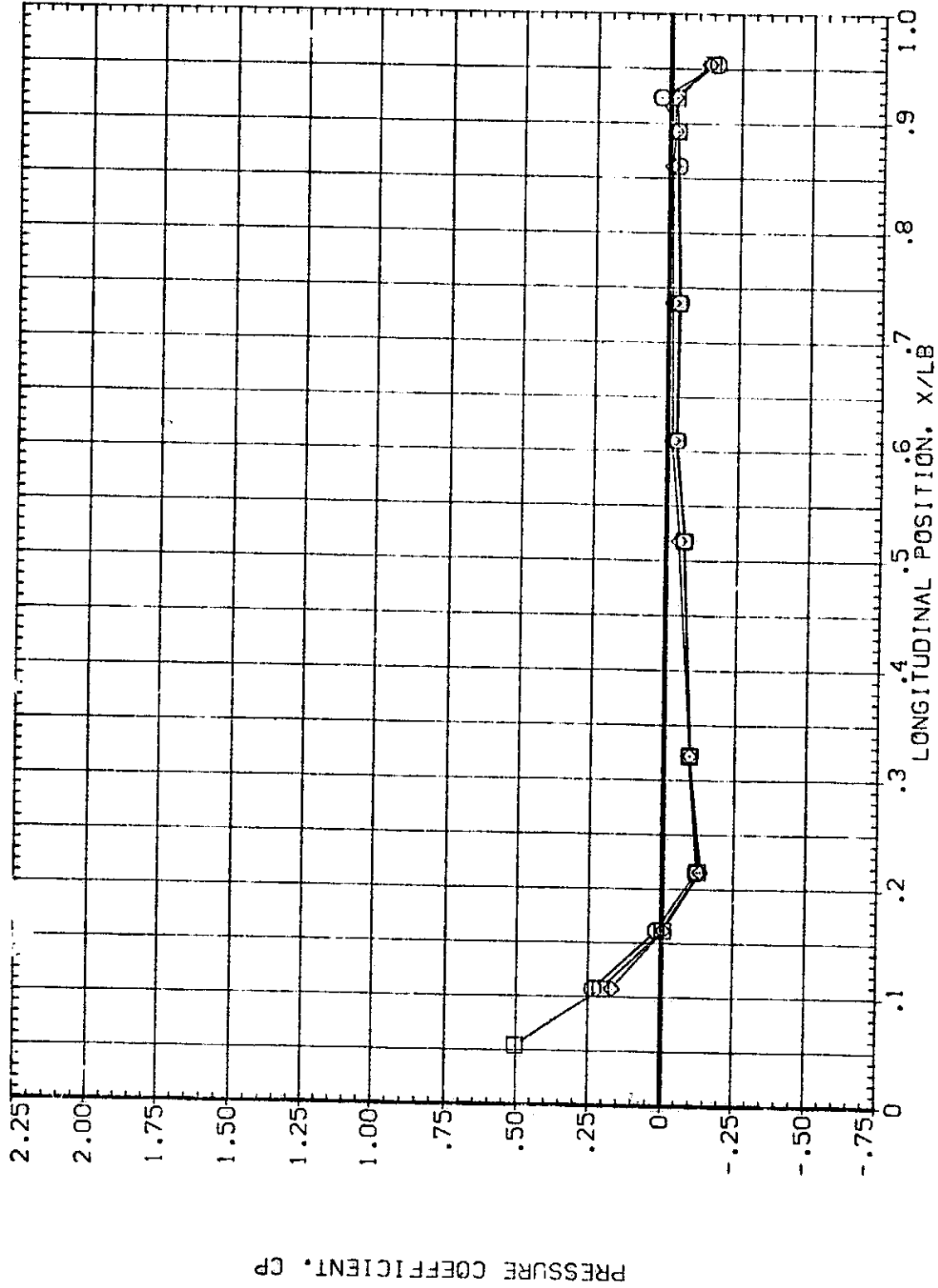


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

(PIA034)

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL  
○  
□  
◇

THETA  
130.000  
232.500  
225.000

ALPHA  
3.770

MACH  
1.960

PARAMETRIC VALUES  
BETA  
MOUNT  
.000  
1.000  
OFFSET  
PHI  
180.000  
.000

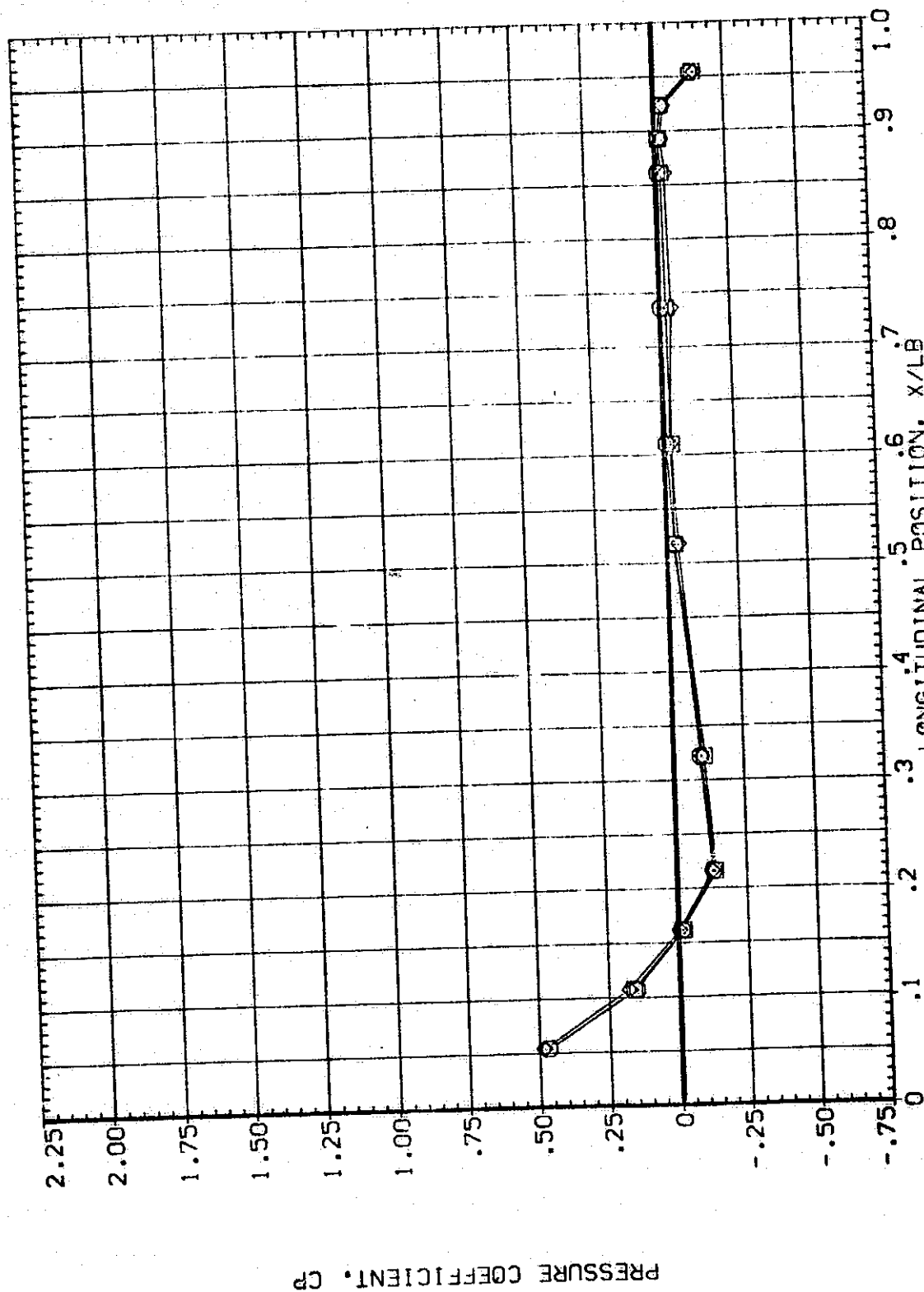


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA034)

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET 180.000  
 PHI .000

SYMBOL THETA ALPHA MACH  
 247.500 3.770 1.960  
 270.000  
 292.500

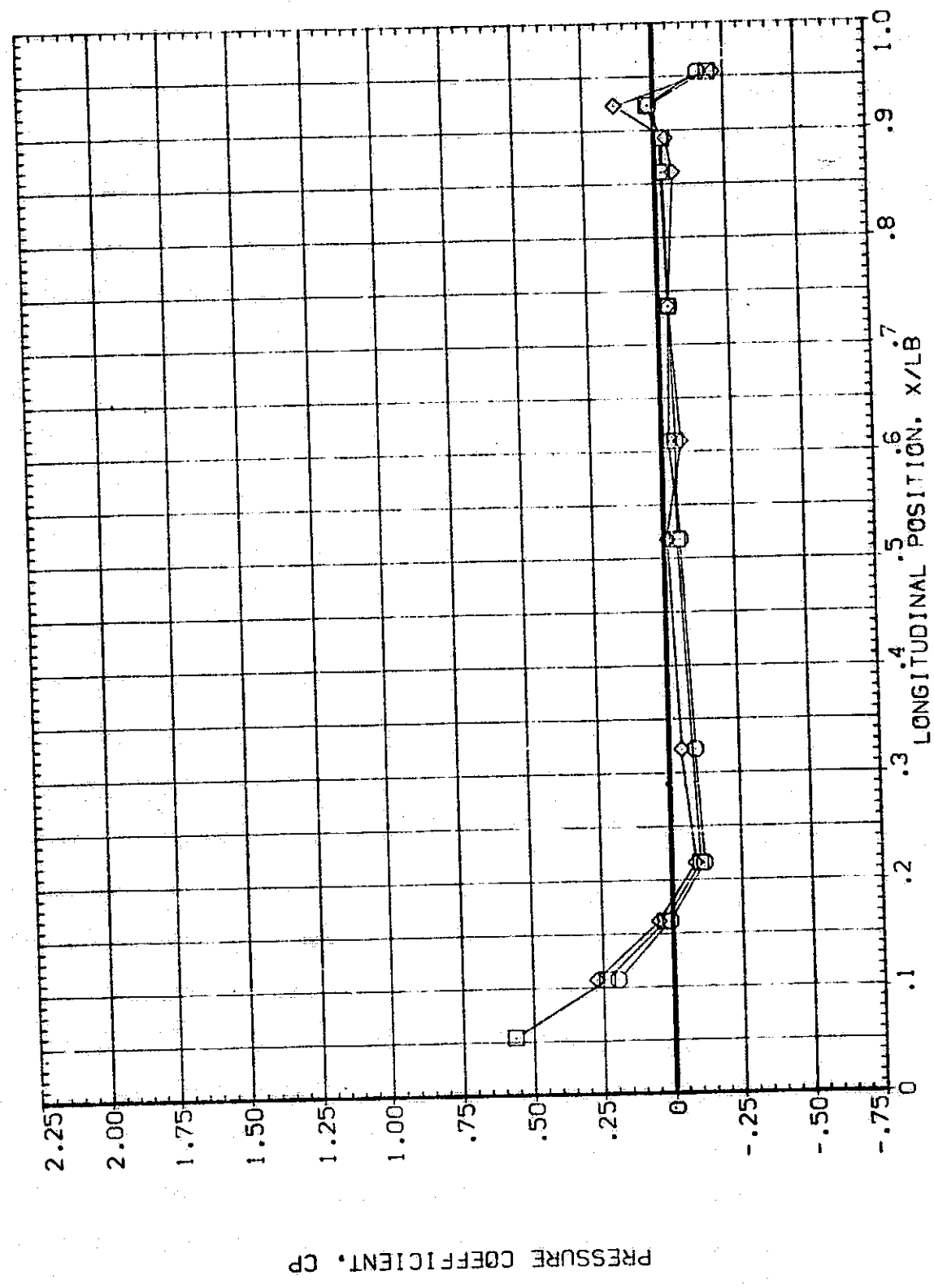


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	315.000	3.770	1.960	.000	.000	.000
○	326.000			1.000		180.000
◇	346.000					

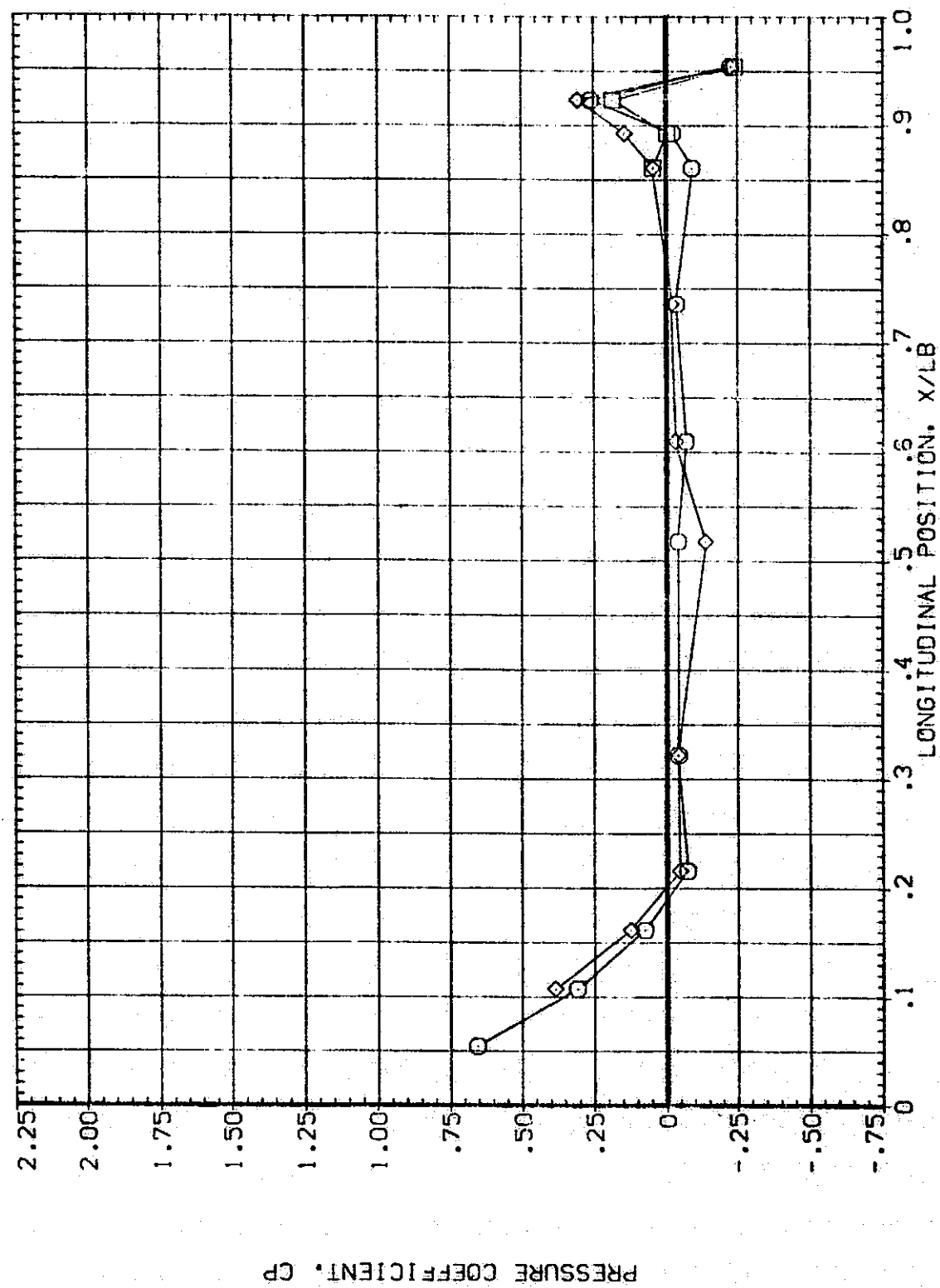


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

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# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A035)

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET 180.000  
 PHI

SYMBOL  
 THETA .000  
 ALPHA 7.820  
 MACH 1.960  
 14.000  
 24.000

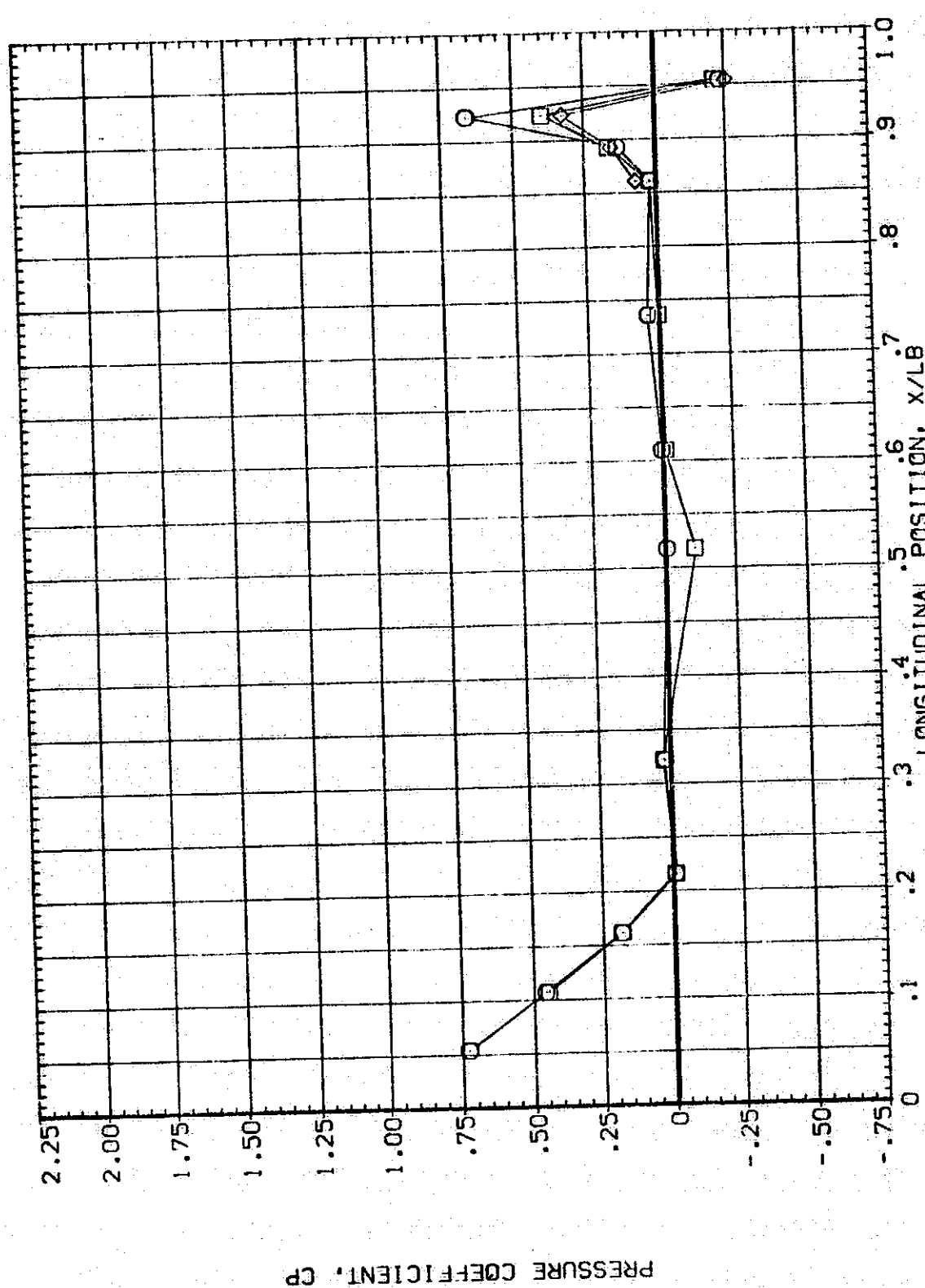


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A035)

SYMBOL

THETA  
45.000  
57.500  
90.000

ALPHA  
7.620

MACH  
1.960

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI  
180.000

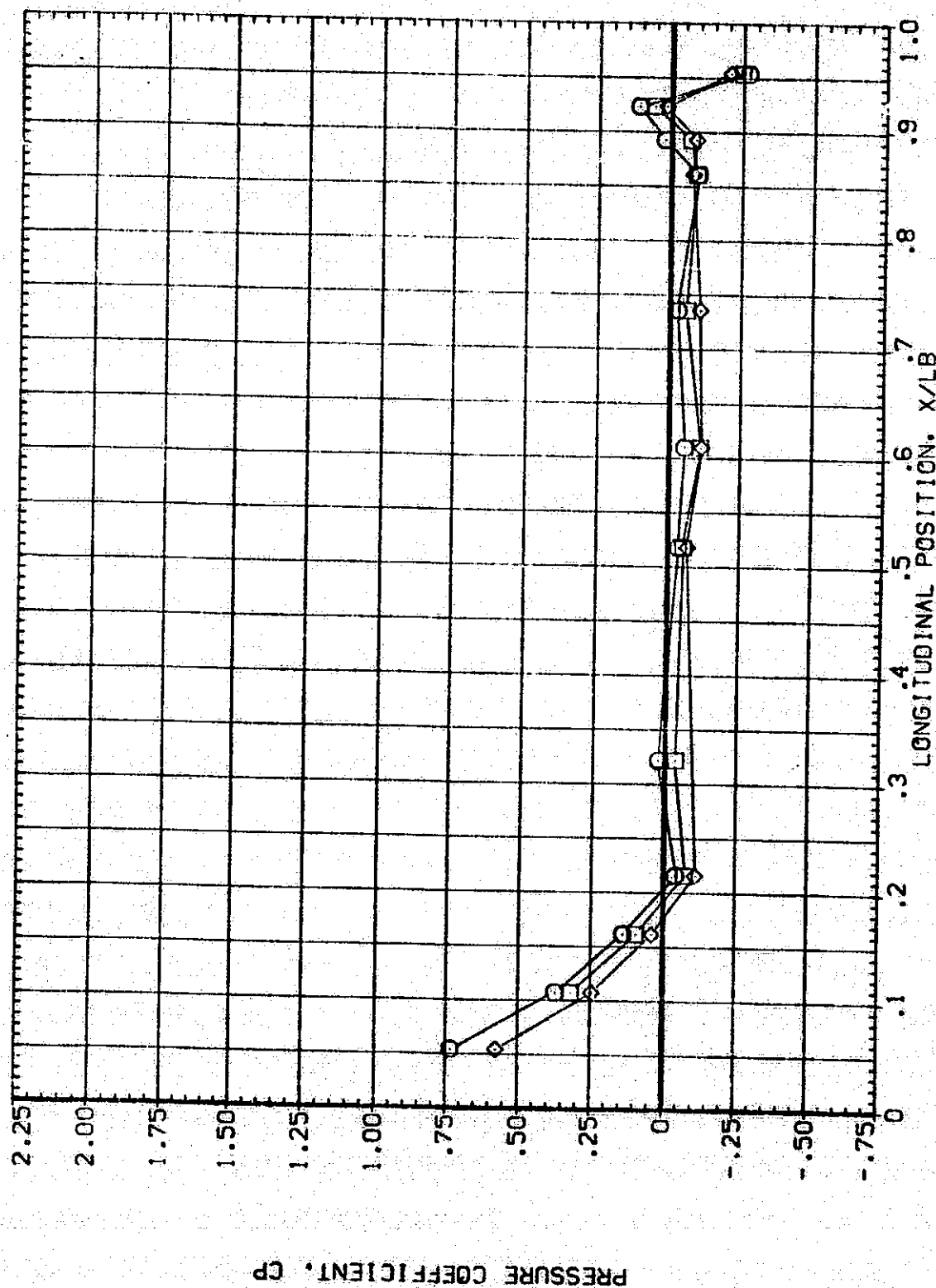


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA035)

SYMB.	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	7.820	1.960	.000	.000	.000
□	135.000			1.000		180.000
◇	137.500					

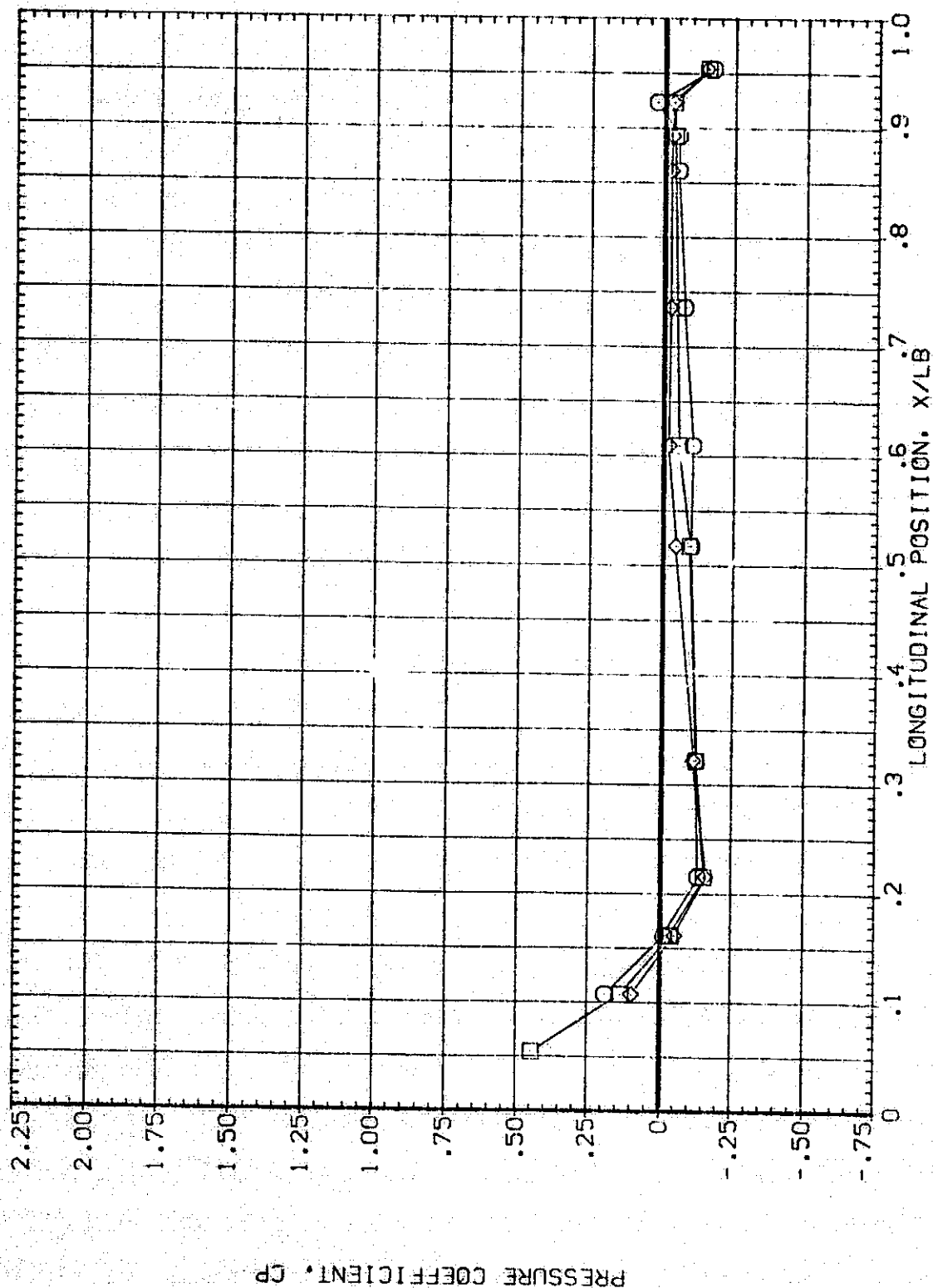


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A035)

PARAMETRIC VALUES  
 .000 .000 .000  
 BETA OFFSET PHI  
 MOUNT 1.000 180.000

ALPHA MACH  
 7.620 1.960

THETA  
 130.000  
 232.500  
 225.000

SYMBOL  
 ○ □ ◇

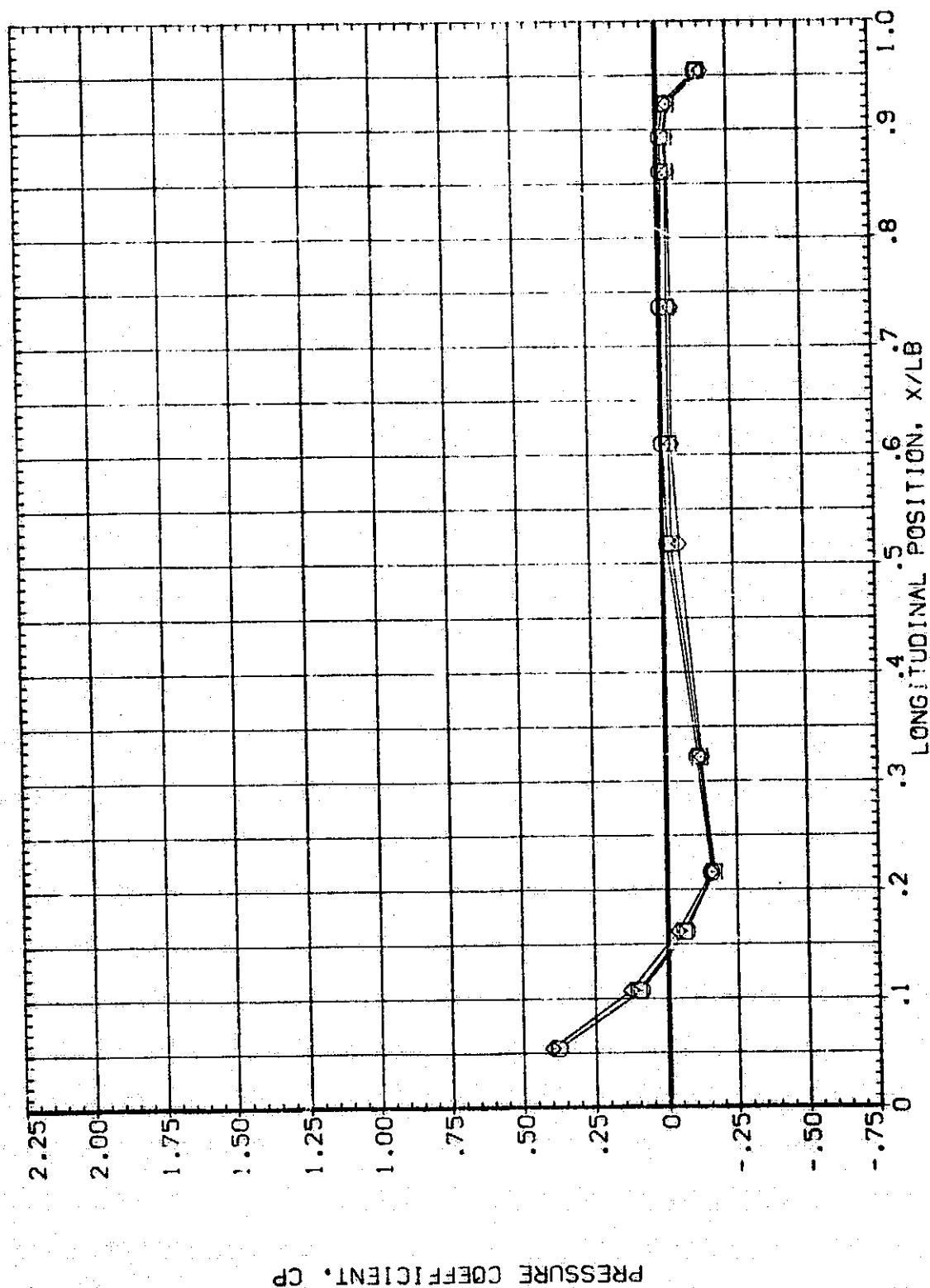


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA035)

PARAMETRIC VALUES  
 .000 .000 .000  
 BETA OFFSET PHI  
 MOUNT 1.000 180.000

SYMBOL THETA ALPHA MACH  
 247.500 7.820 1.960  
 270.000  
 292.500

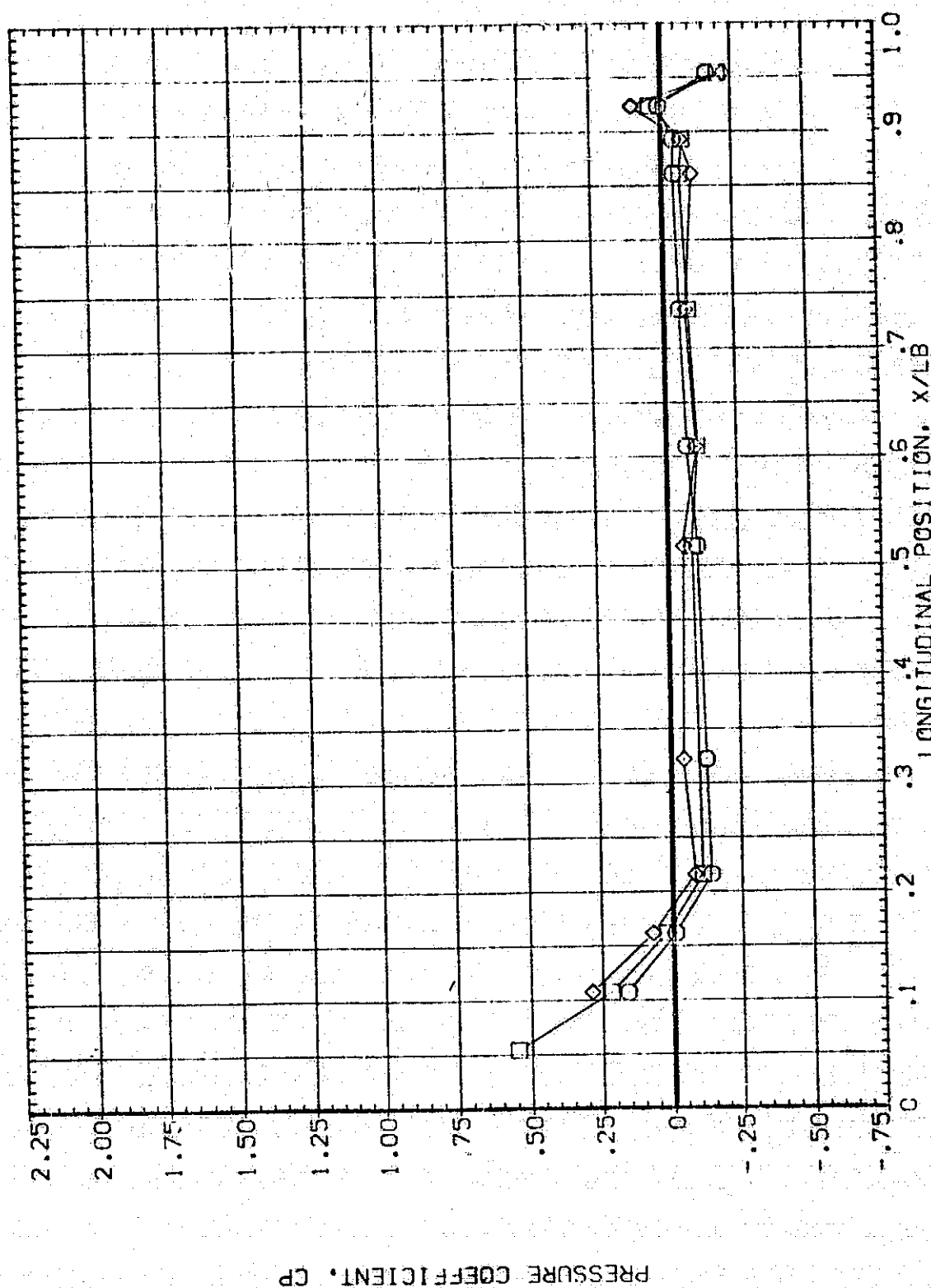


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A035)

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 180.000

SYMBOL THETA ALPHA MACH  
 315.000 7.820 1.960  
 326.000  
 346.000

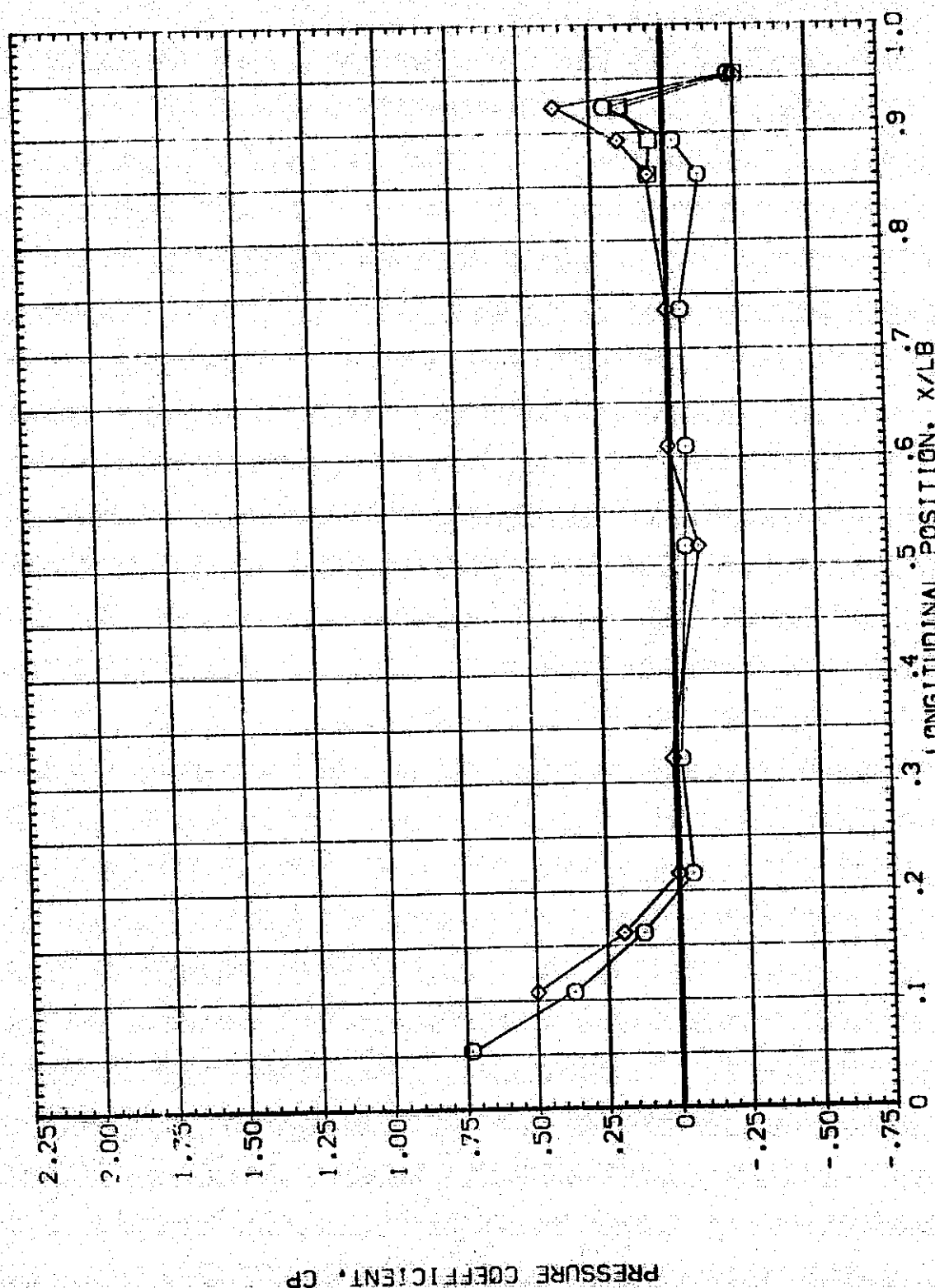


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (PIA036)

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	.000	12.570	1.970	MOUNT	.000 OFFSET
□	14.000				1.000 PHI
◇	24.000				20.000
					180.000

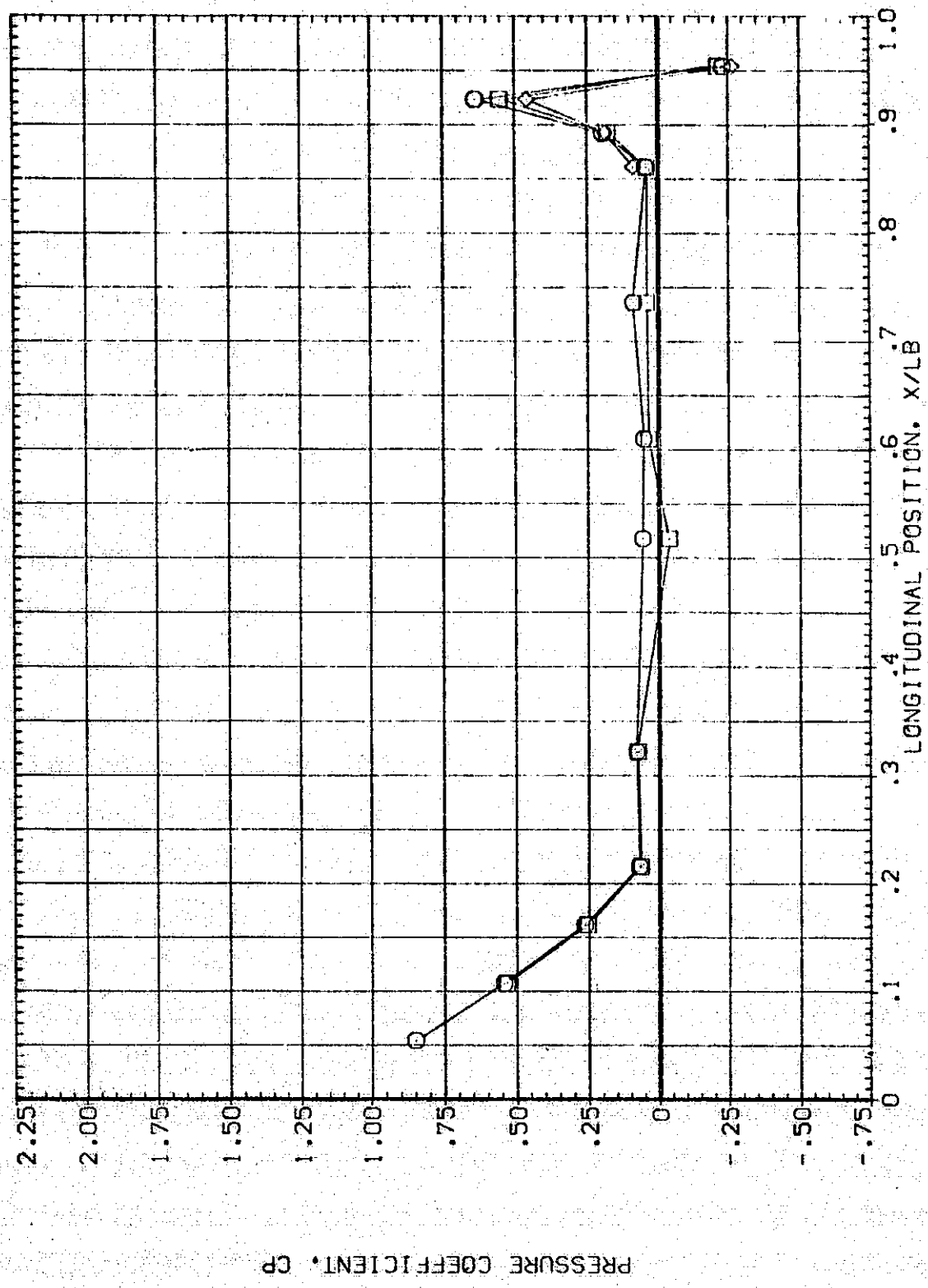


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
○  
□  
◇

THETA 45.000  
57.500  
90.000

ALPHA 12.570

MACH 1.970

BETA  
MOUNT

PARAMETRIC VALUES  
.000 .000  
1.000 PH1  
20.000  
180.000

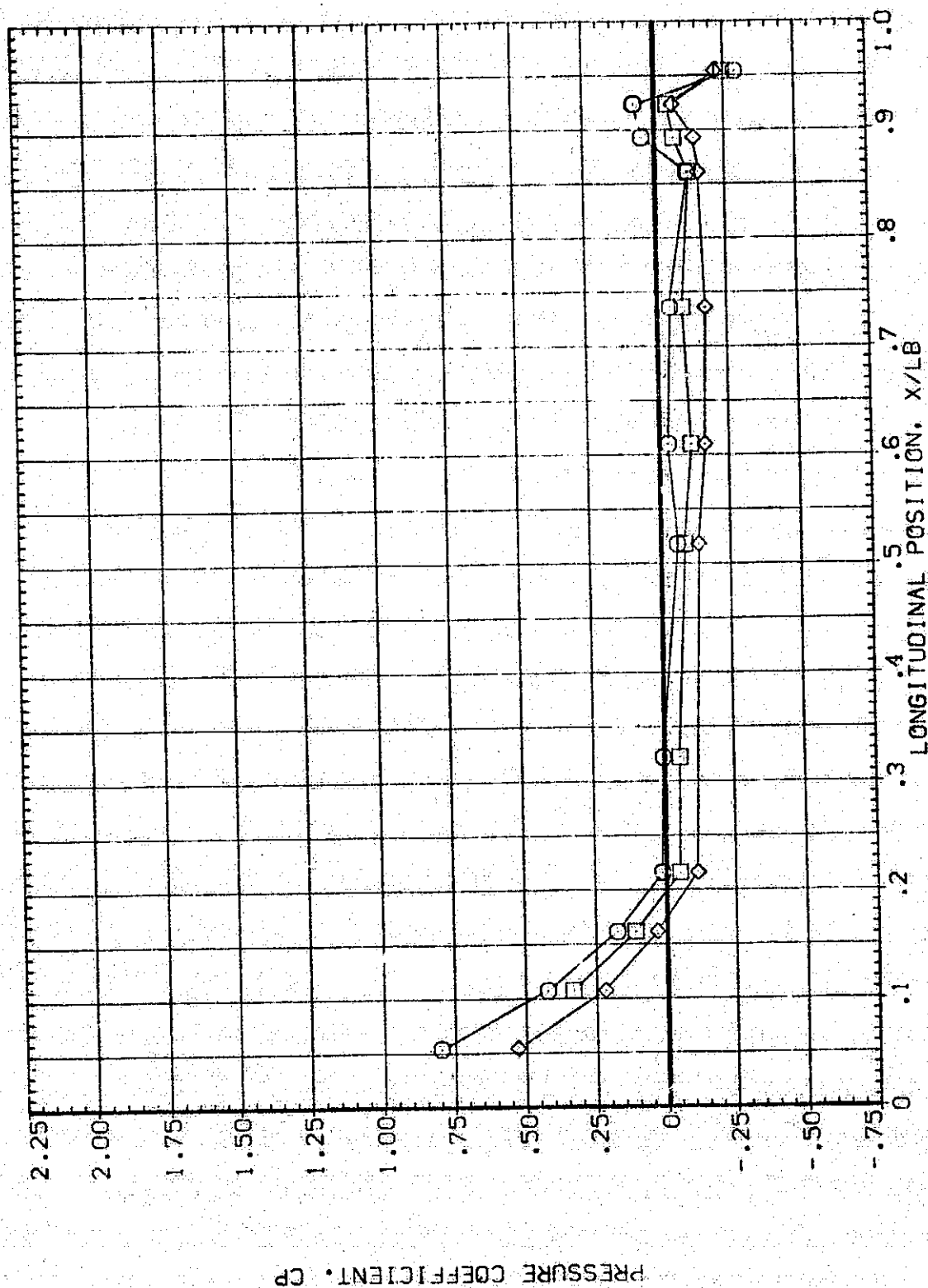


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL .JK. T1 (P1A036)

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	112.500	12.570	1.970	.000	OFFSET
□	125.000			1.000	PHI
◇	137.500				

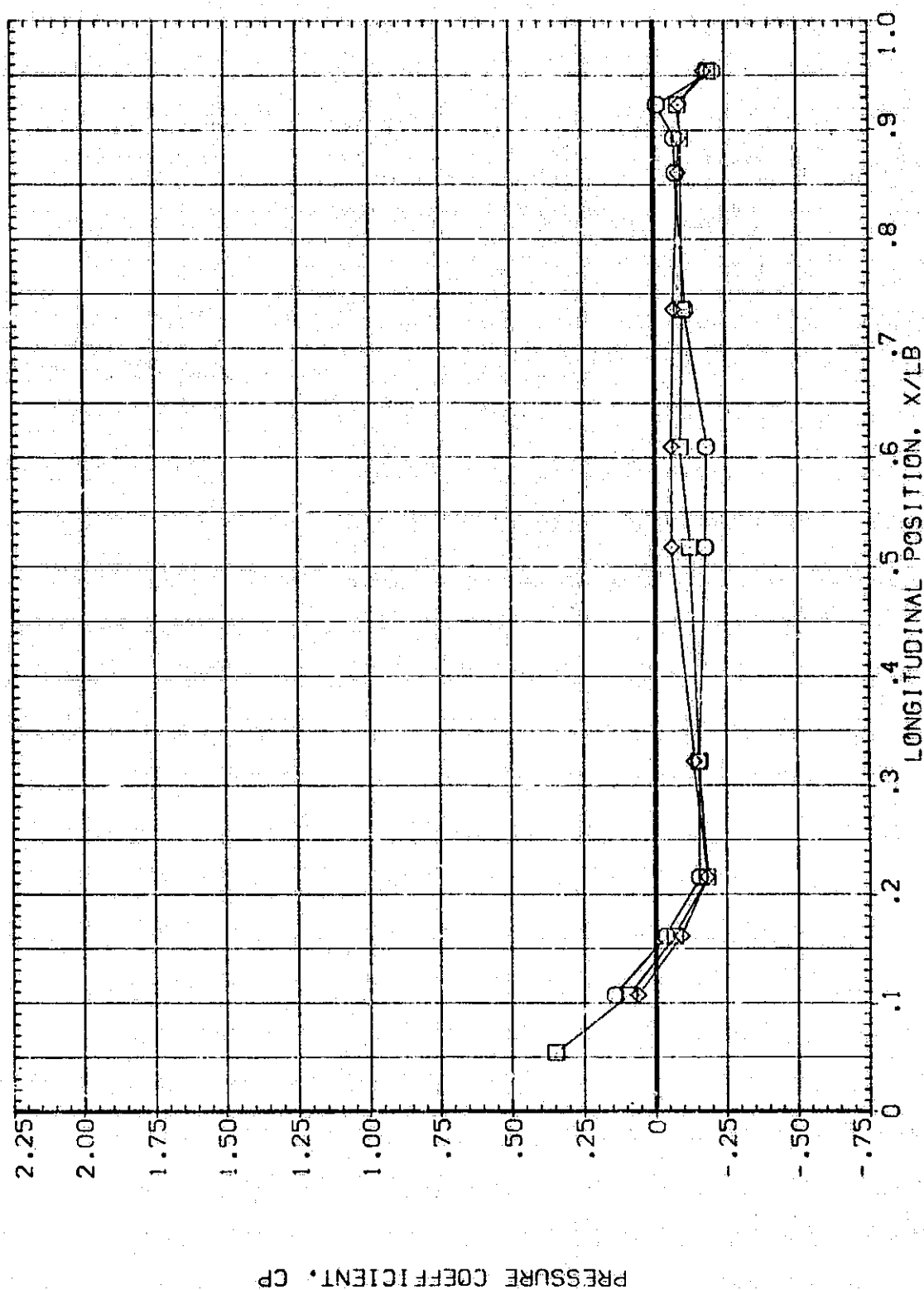


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL    THETA    ALPHA    MACH  
 ○    130.000    12.570    1.970  
 □    232.500  
 ◇    225.000

PARAMETRIC VALUES  
 BETA    .000    OFFSET    20.000  
 MOUNT    1.000    PHI    160.000

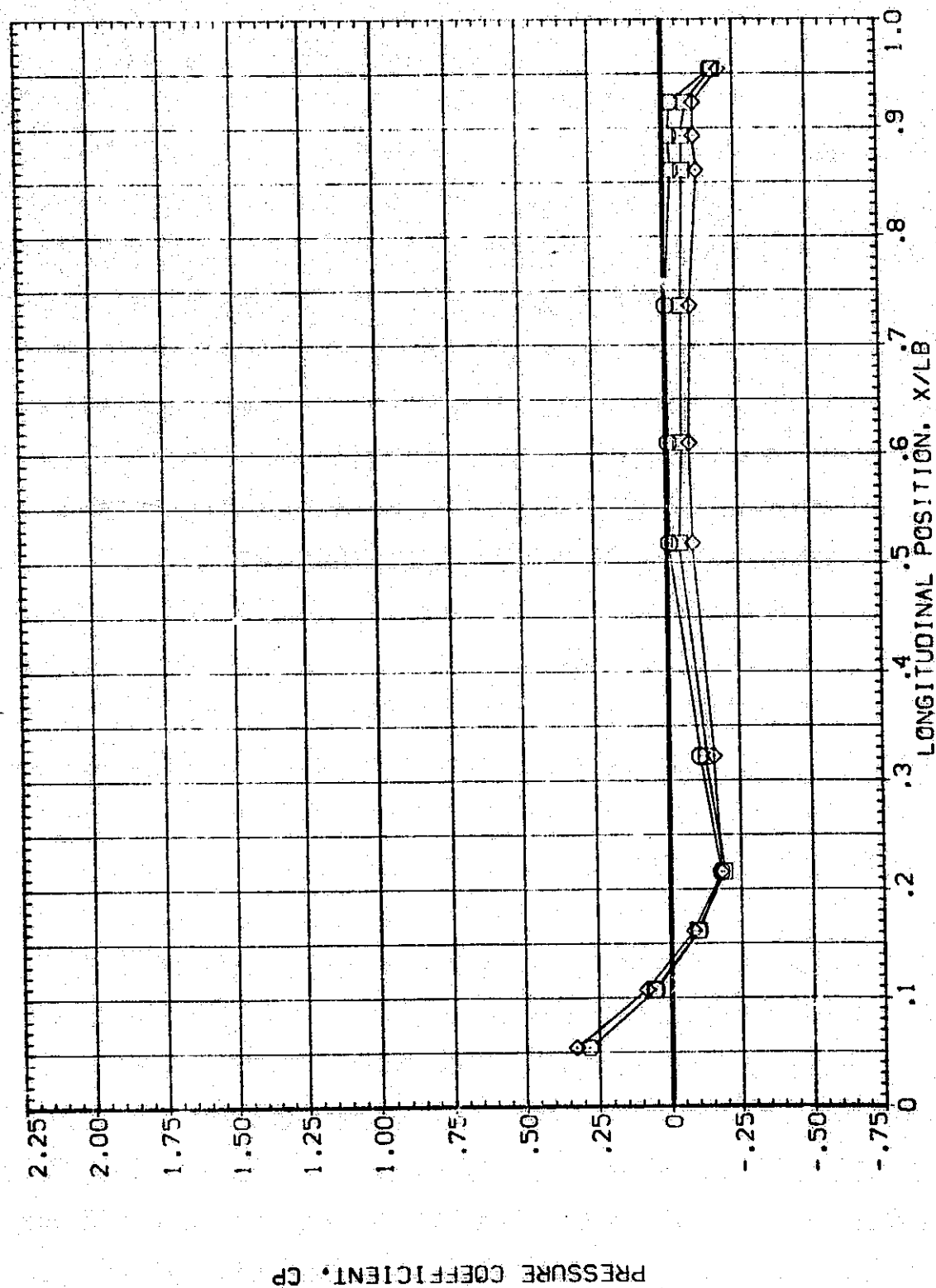


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES





MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA036)

SYMBOL  
□  
◇

THETA  
247.500  
270.000  
292.500

ALPHA  
12.570

MACH  
1.970

PARAMETRIC VALUES  
BETA  
MOUNT

OFFSET  
PHI

20.000  
180.000

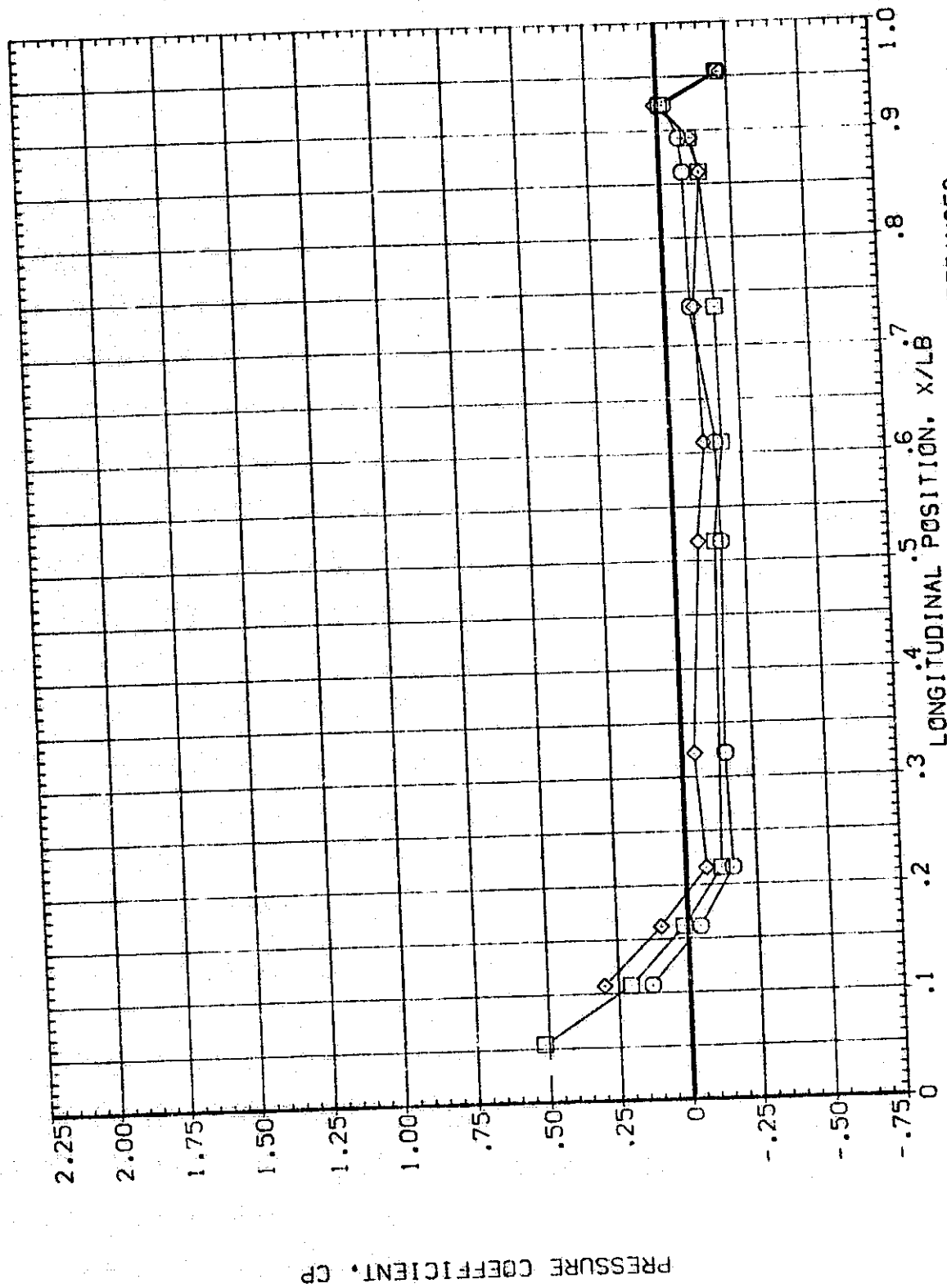


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 315.000 12.570 1.970  
 326.000  
 346.000

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI 180.000

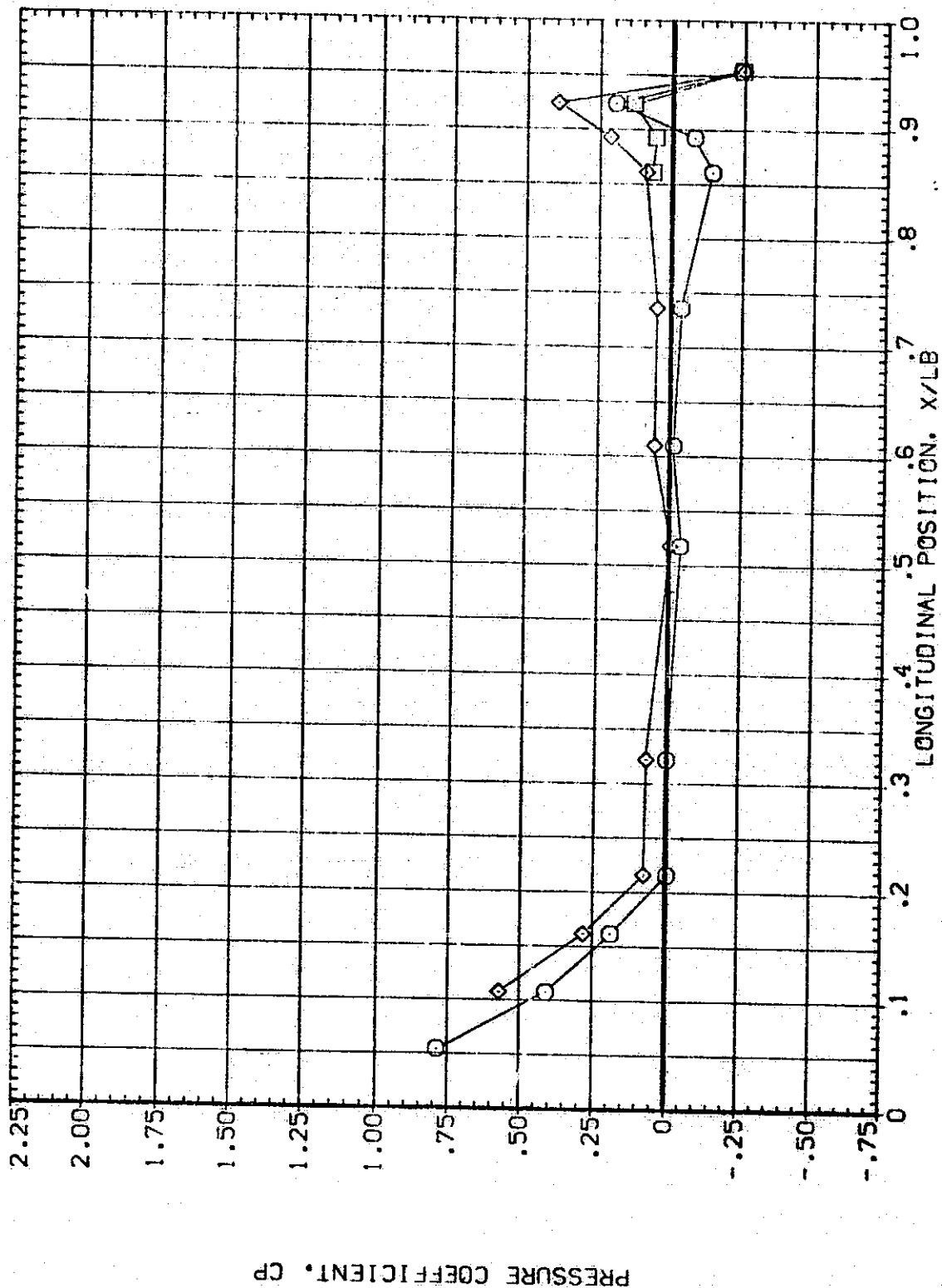


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA037)

SYMBOL  
 ○ □ ◇

THETA .000  
 14.000  
 24.000

ALPHA 16.660

MACH 1.960

BETA MOUNT

PARAMETRIC VALUES  
 .000 OFFSET  
 1.000 PHI  
 20.000  
 180.000

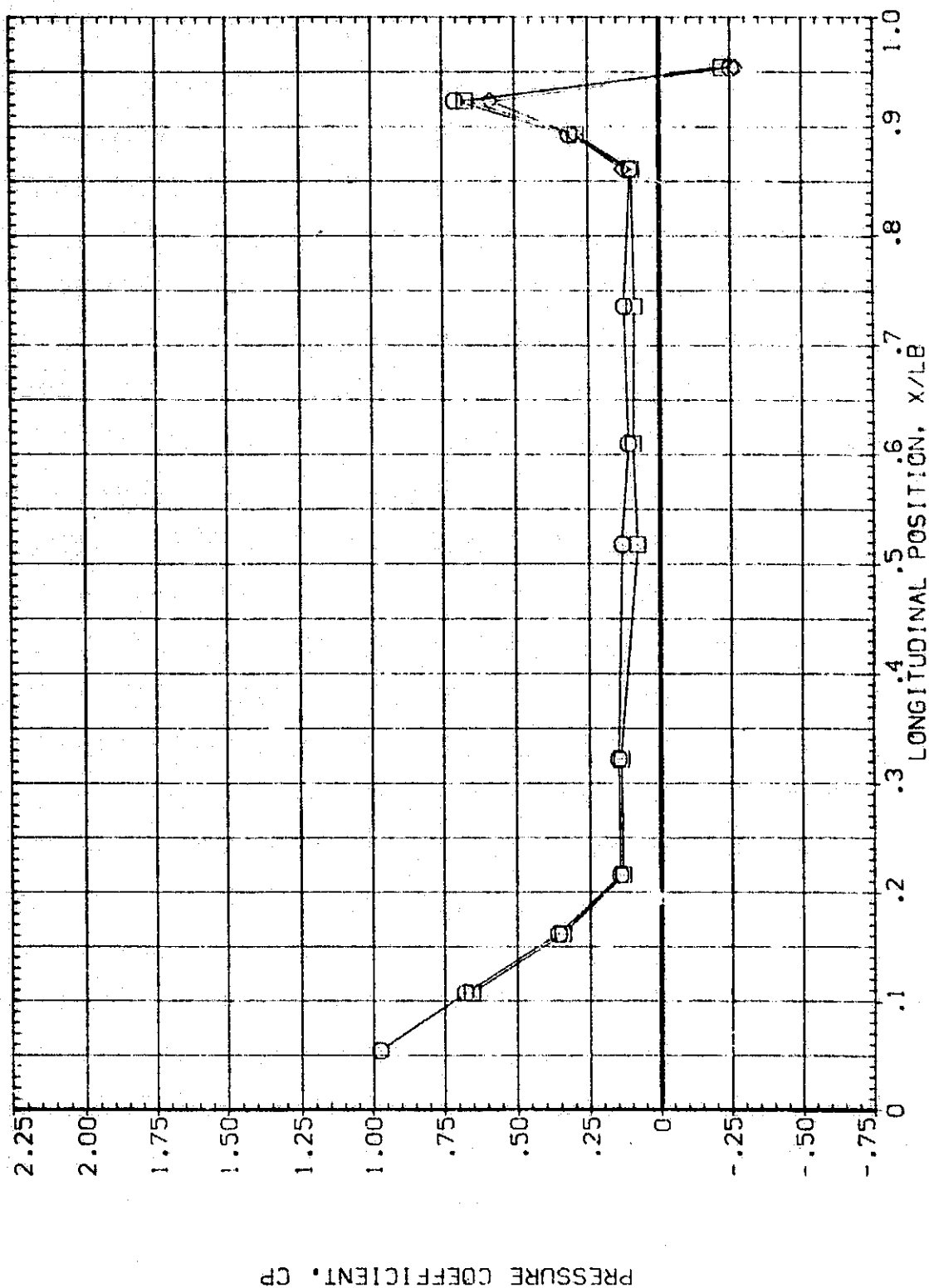


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	.000	OFFSET
○	45.000	16.660	1.960	MOUNT	1.000	PHI
□	57.500					
◇	90.000					

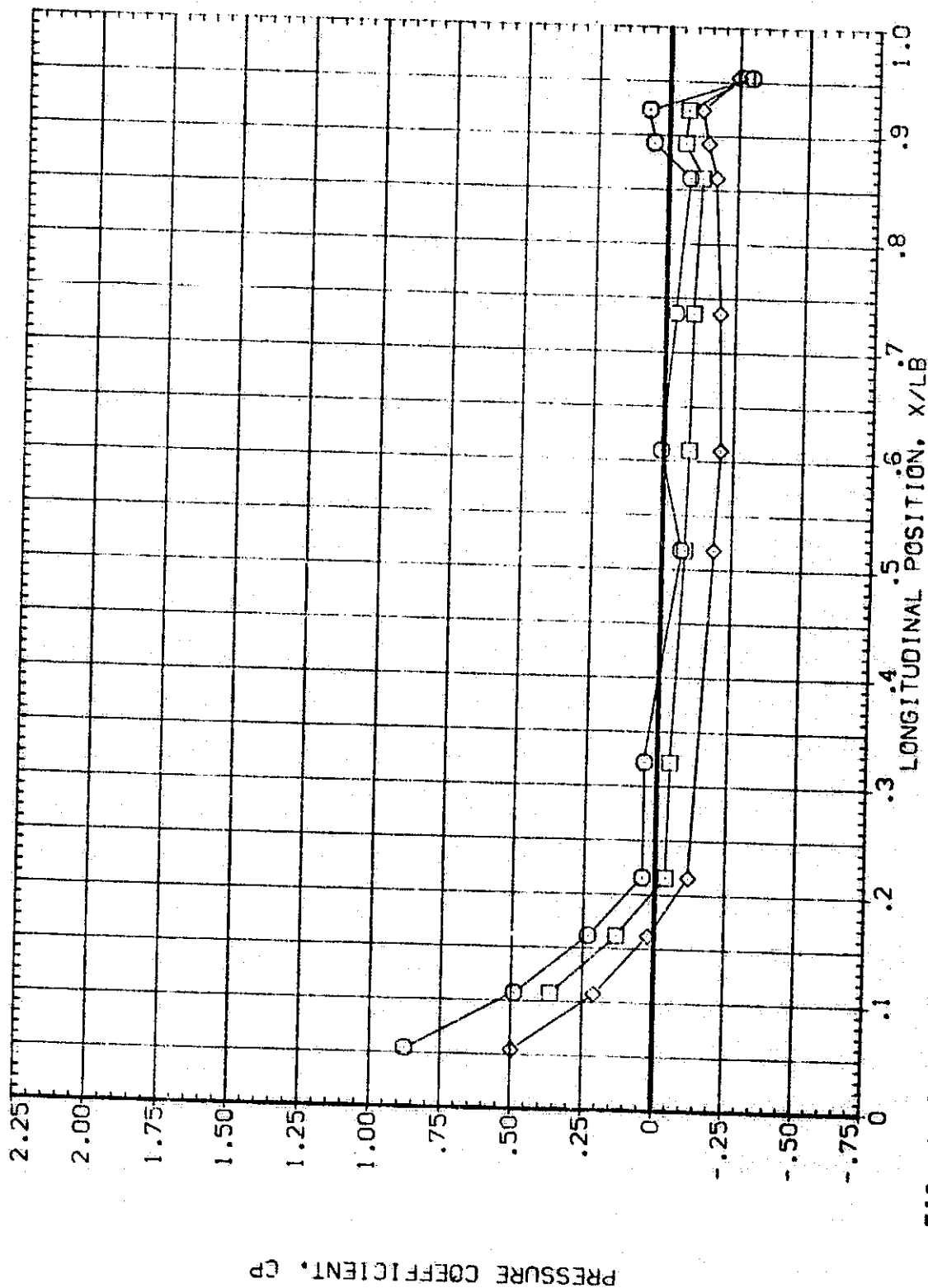


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA037)

SYMBOL

$\square$  12.500  
 $\square$  135.000  
 $\diamond$  157.500

THETA  
 16.500  
 ALPHA  
 16.660  
 MACH  
 1.960

BETA  
 .000  
 \*OUNT  
 1.000  
 PHI  
 .000  
 PARAMETRIC VALUES  
 20.000  
 180.000

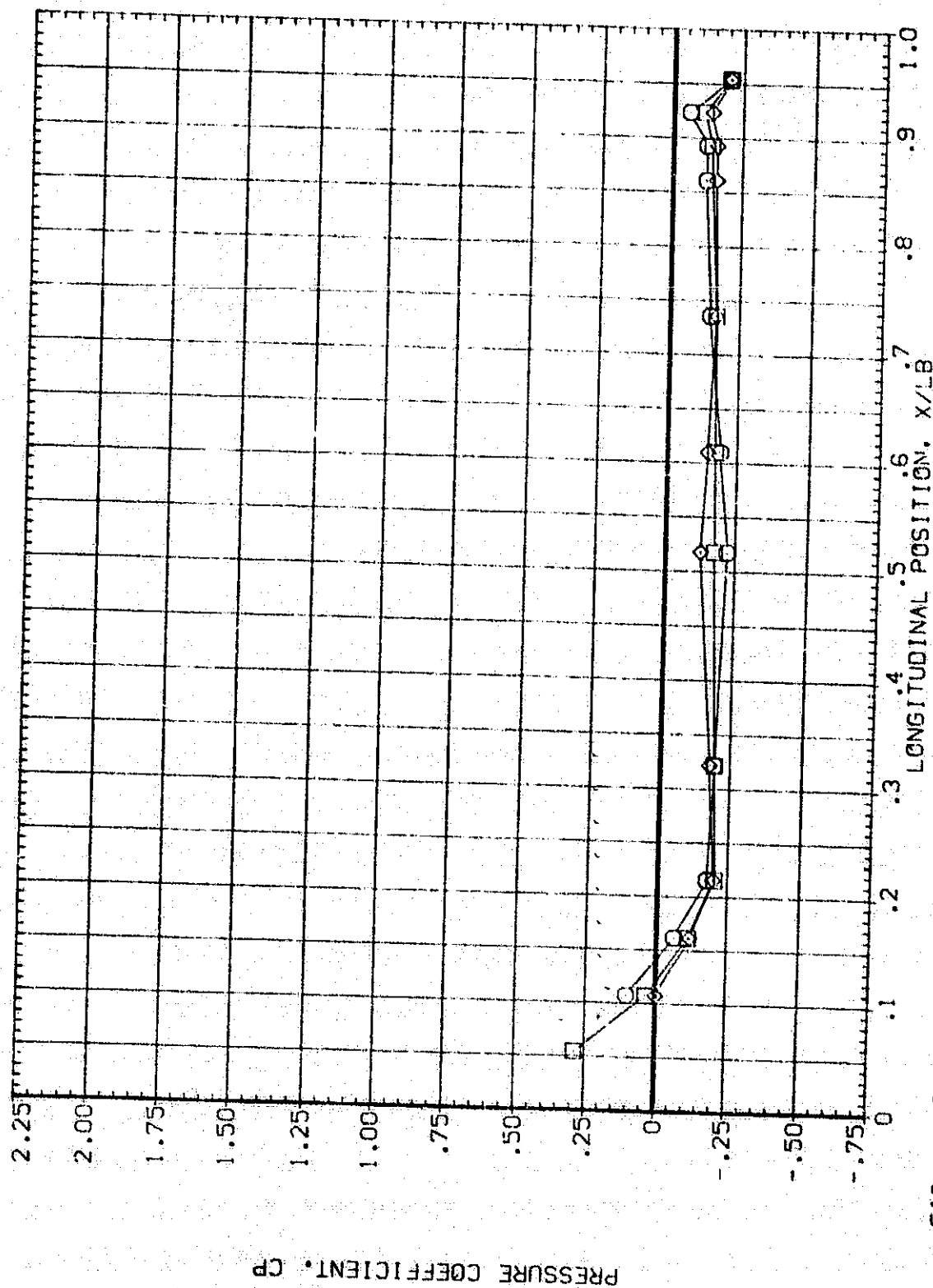


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 ○ 190.000 16.660 1.960  
 □ 222.500  
 ◇ 225.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 180.000

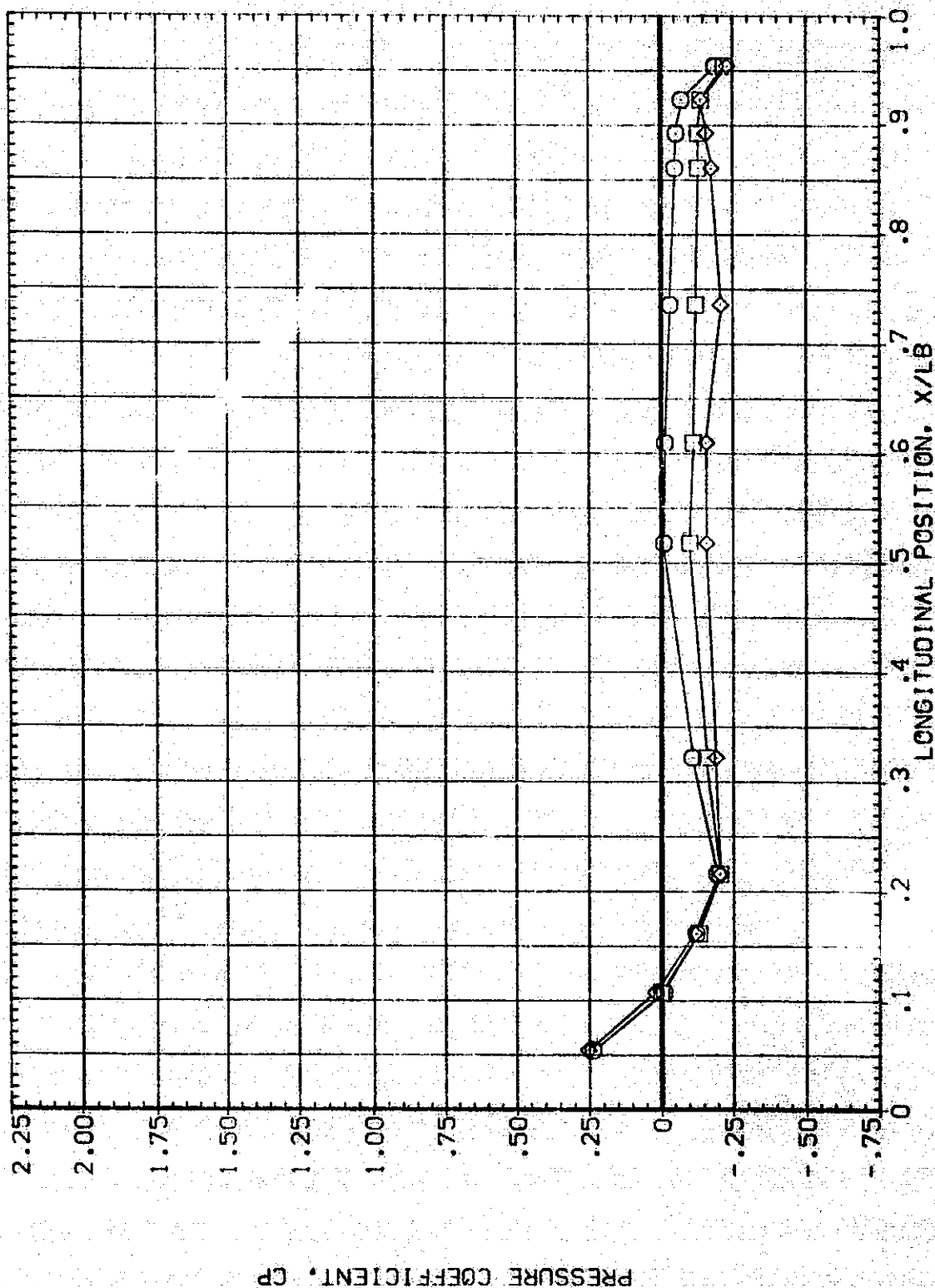


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA037)

PARAMETRIC VALUES  
BETA .000  
PHI 1.000  
MOUNT 20.000  
180.000

THETA ALPHA MACH  
247.500 16.660 1.960  
270.000  
292.500

SYMBOL  
□  
◇

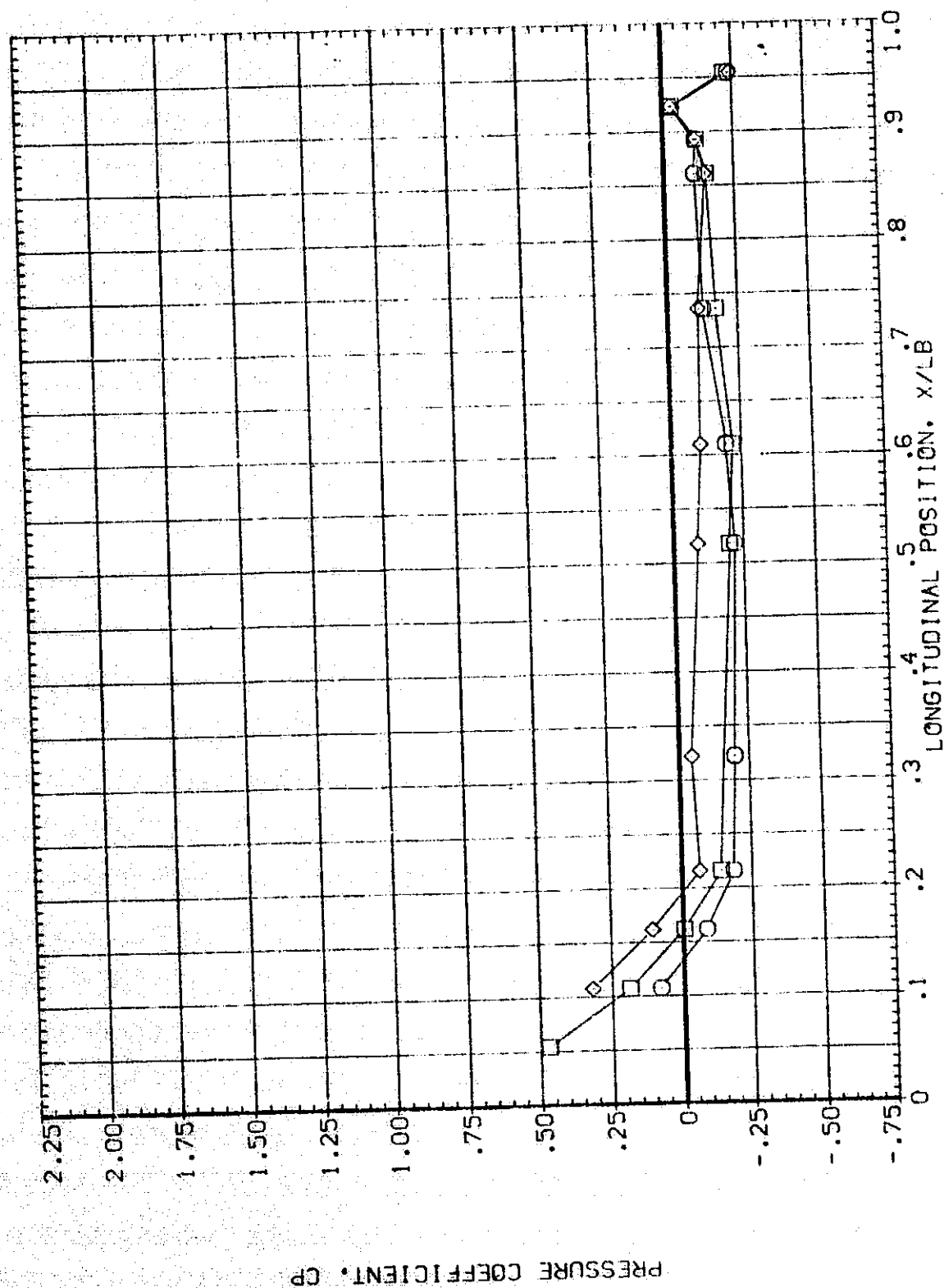


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
○  
□  
◇

THETA  
315.000  
326.000  
346.000

ALPHA  
16.660

MACH  
1.960

BETA  
MOUNT

PARAMETRIC VALUES  
.000 .000 .PHI  
1.000 1.000 .PHI

20.000  
180.000

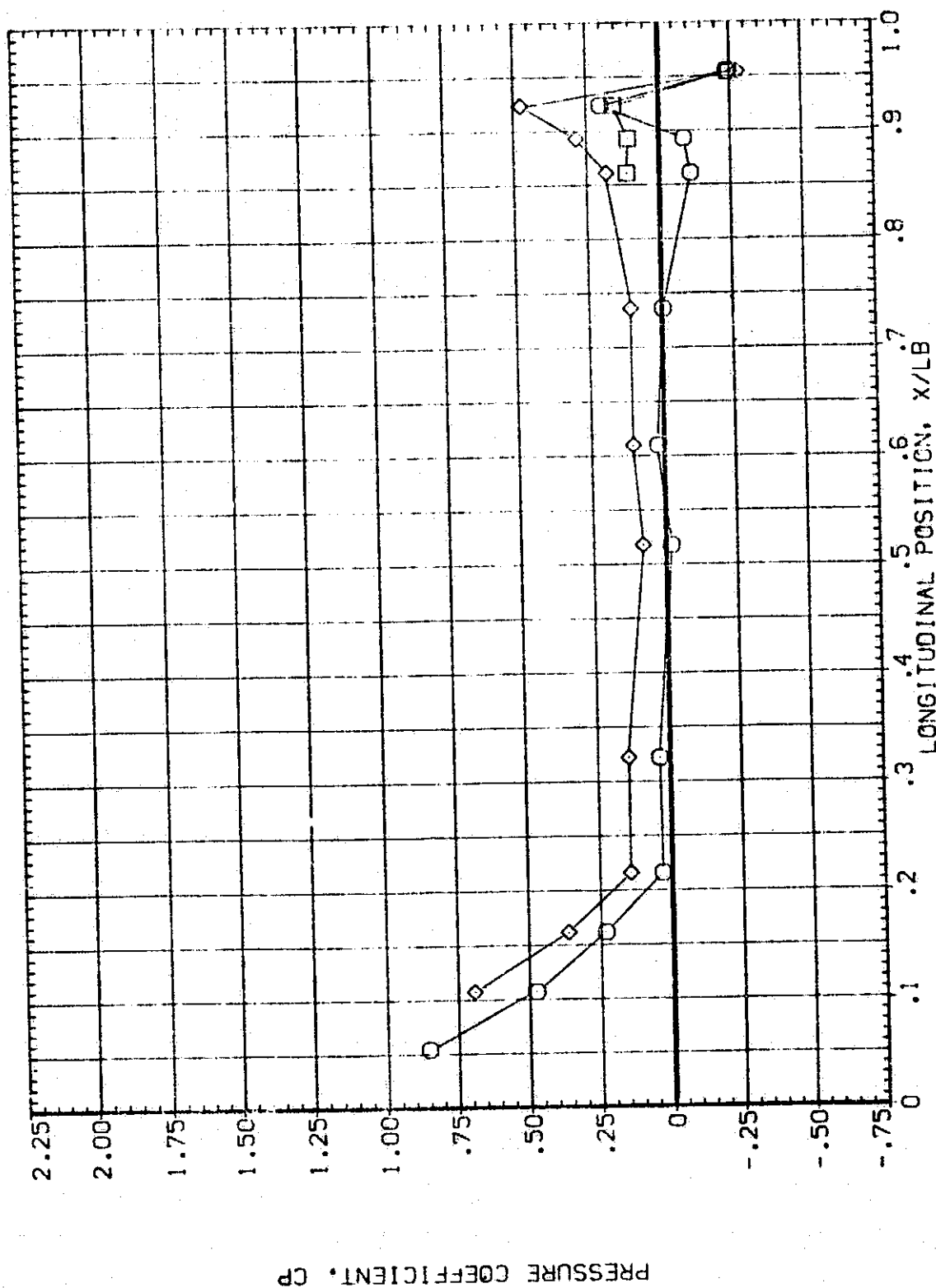


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA038)

SYMBOL

THETA  
.000  
14.000  
24.000

ALPHA  
20.740

MACH  
1.960

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI

20.000  
180.000

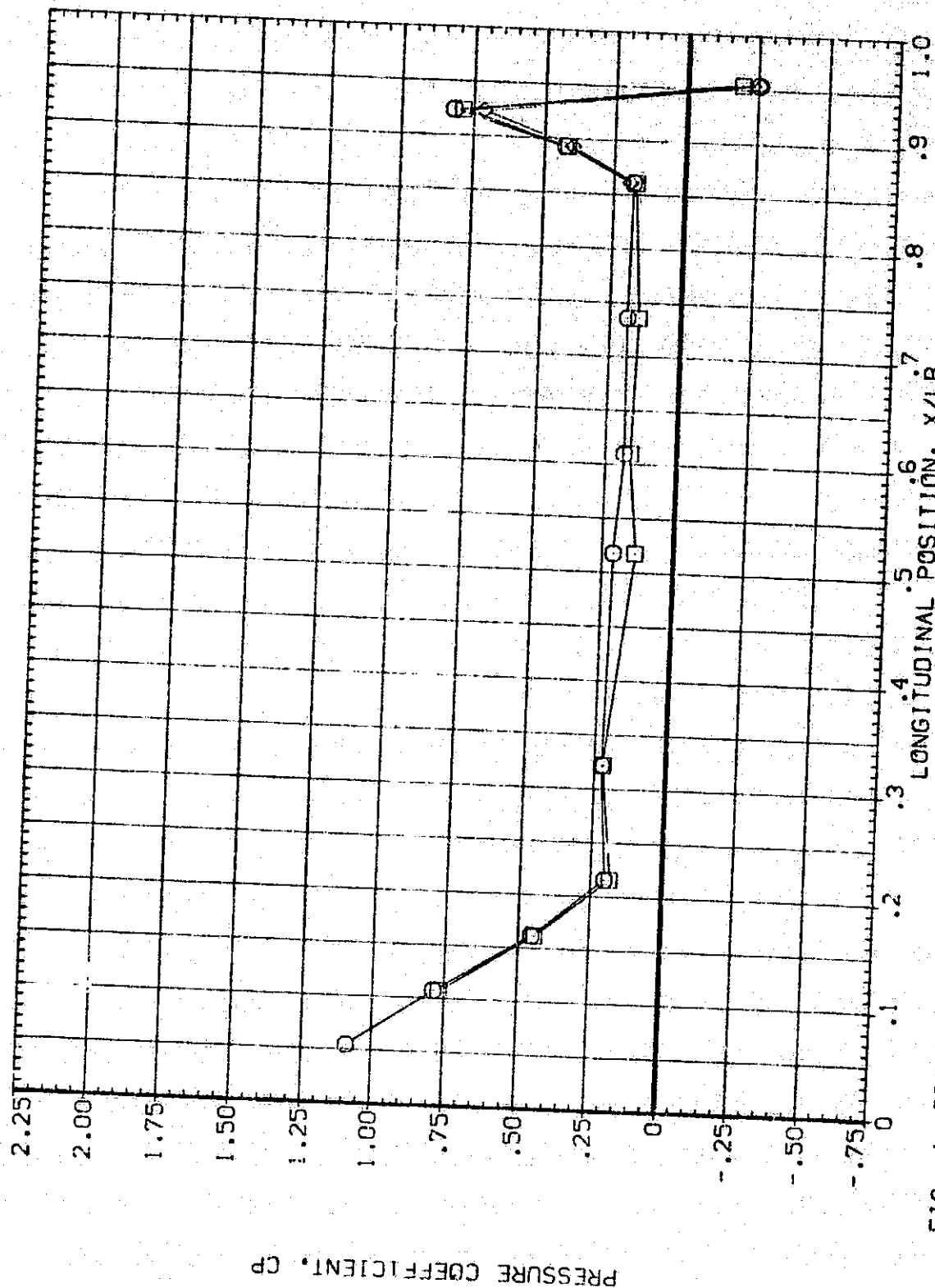


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 .0000 OFFSET 20.000  
 1.000 PHI 180.000

BETA  
 MOUNT

ALPHA 20.740  
 MACH 1.960

THETA 45.000  
 57.500  
 90.000

SYMBOL  
 ○  
 □  
 ◇

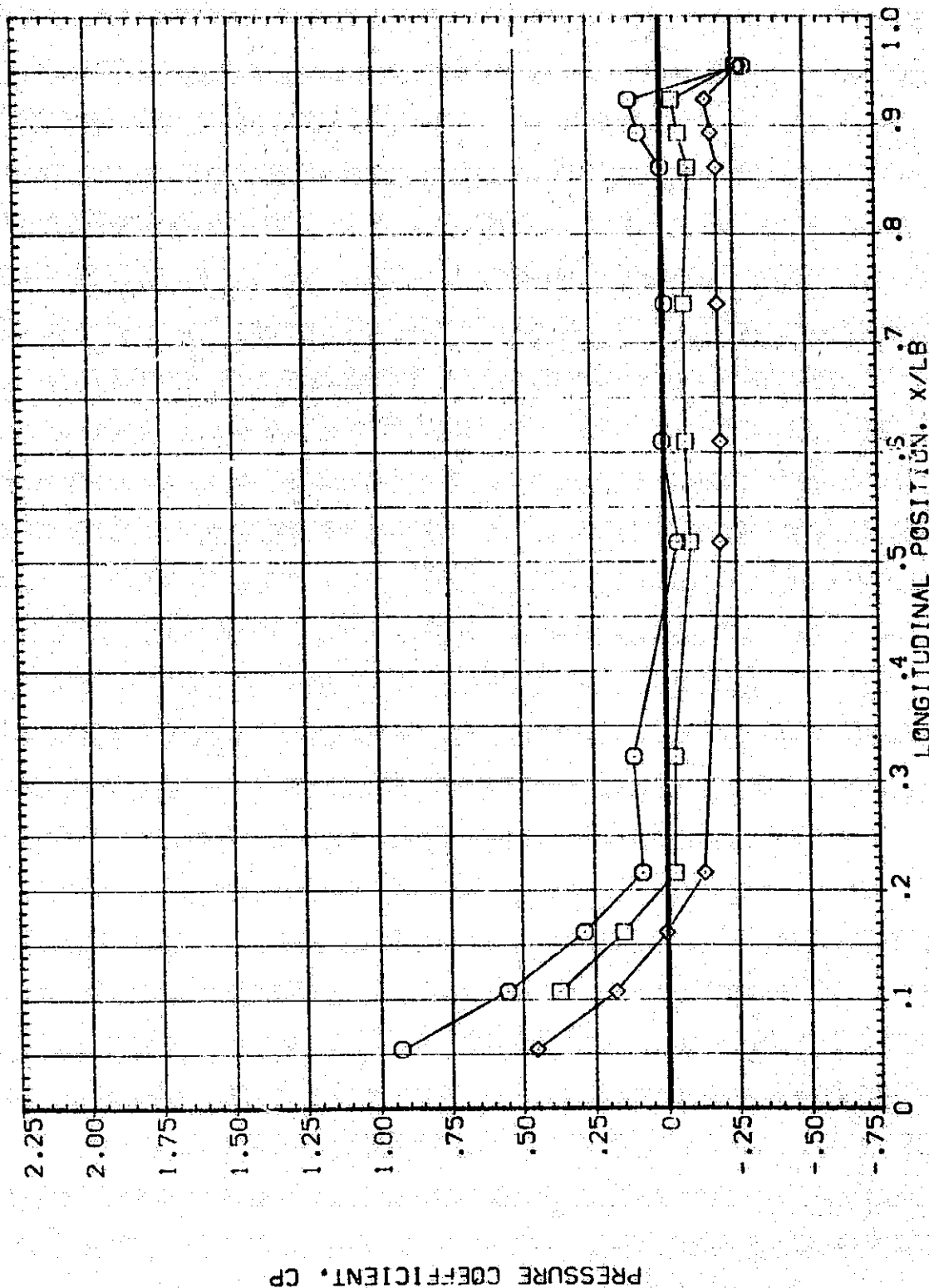


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A038)

SYMBOL THETA ALPHA MACH  
 □ 112.500 20.740 1.960  
 ○ 135.000  
 ◇ 157.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PH1  
 20.000  
 180.000

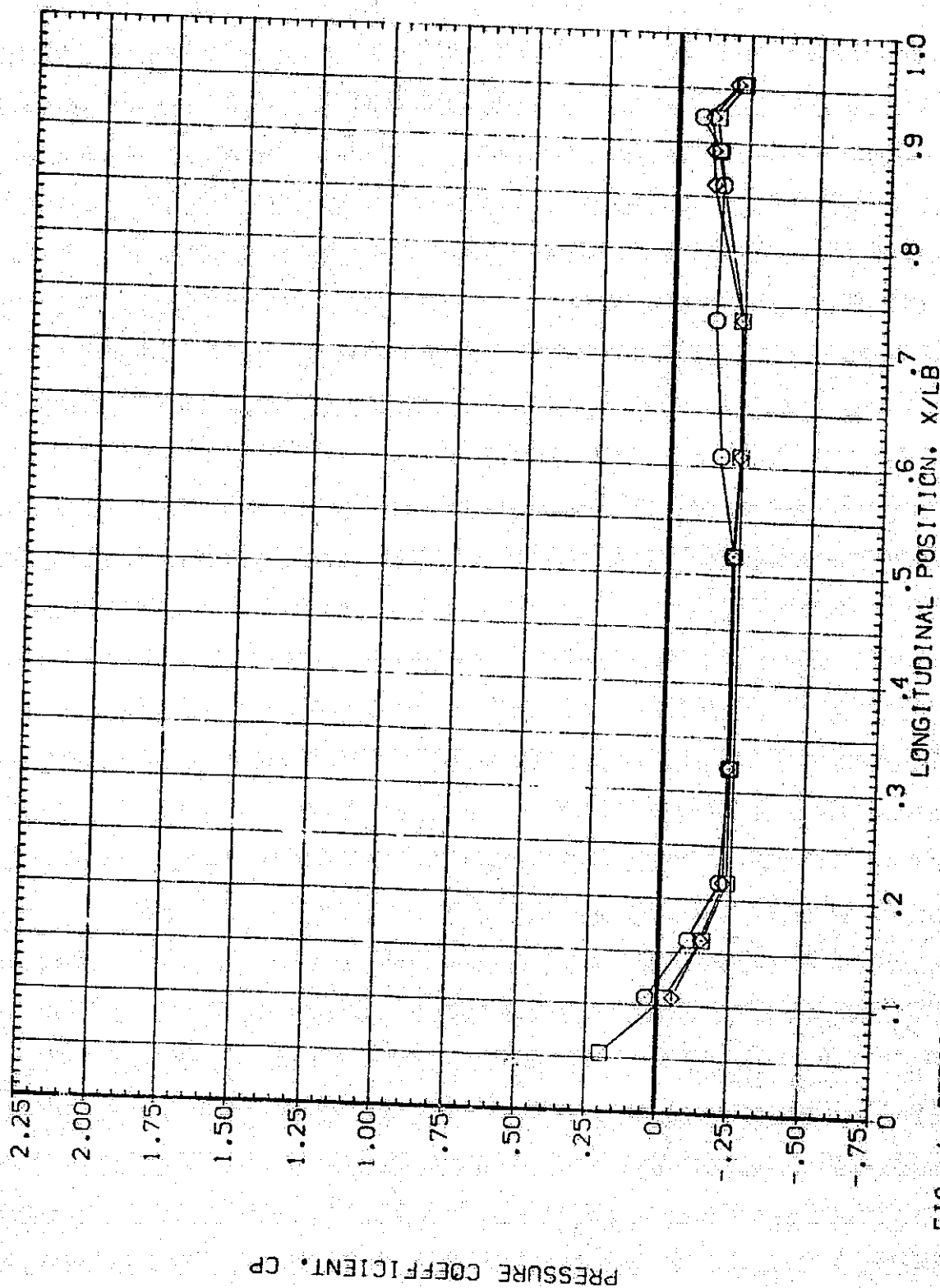


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 ○ 130.000 20.740 1.960  
 □ 232.500  
 ◇ 225.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 180.000

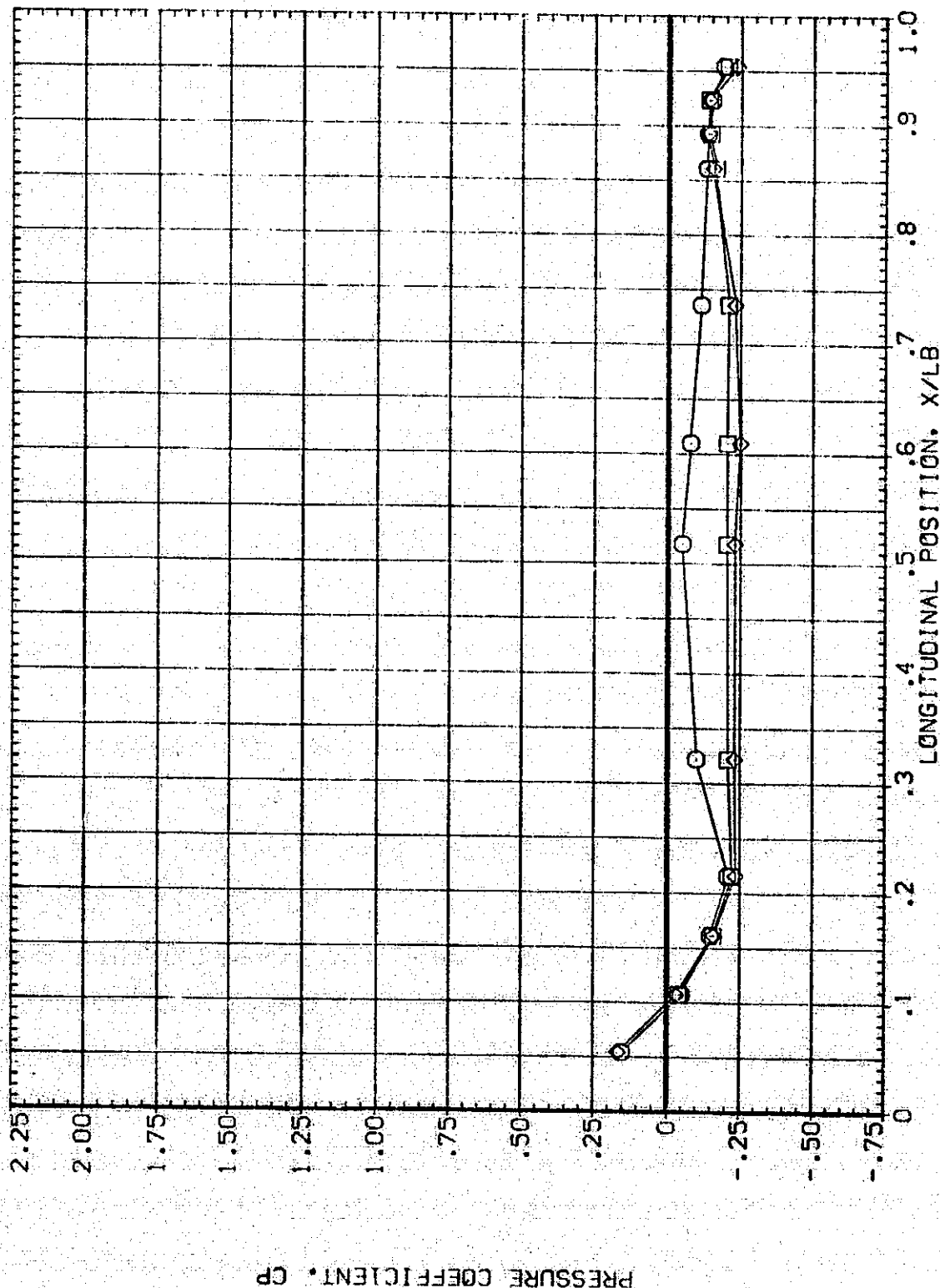


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A038)

SYMBOL  
 247.500  
 270.000  
 292.500

THETA  
 20.740  
 1.960

PARAMETRIC VALUES

BETA  
 MOUNT  
 1.000  
 180.000

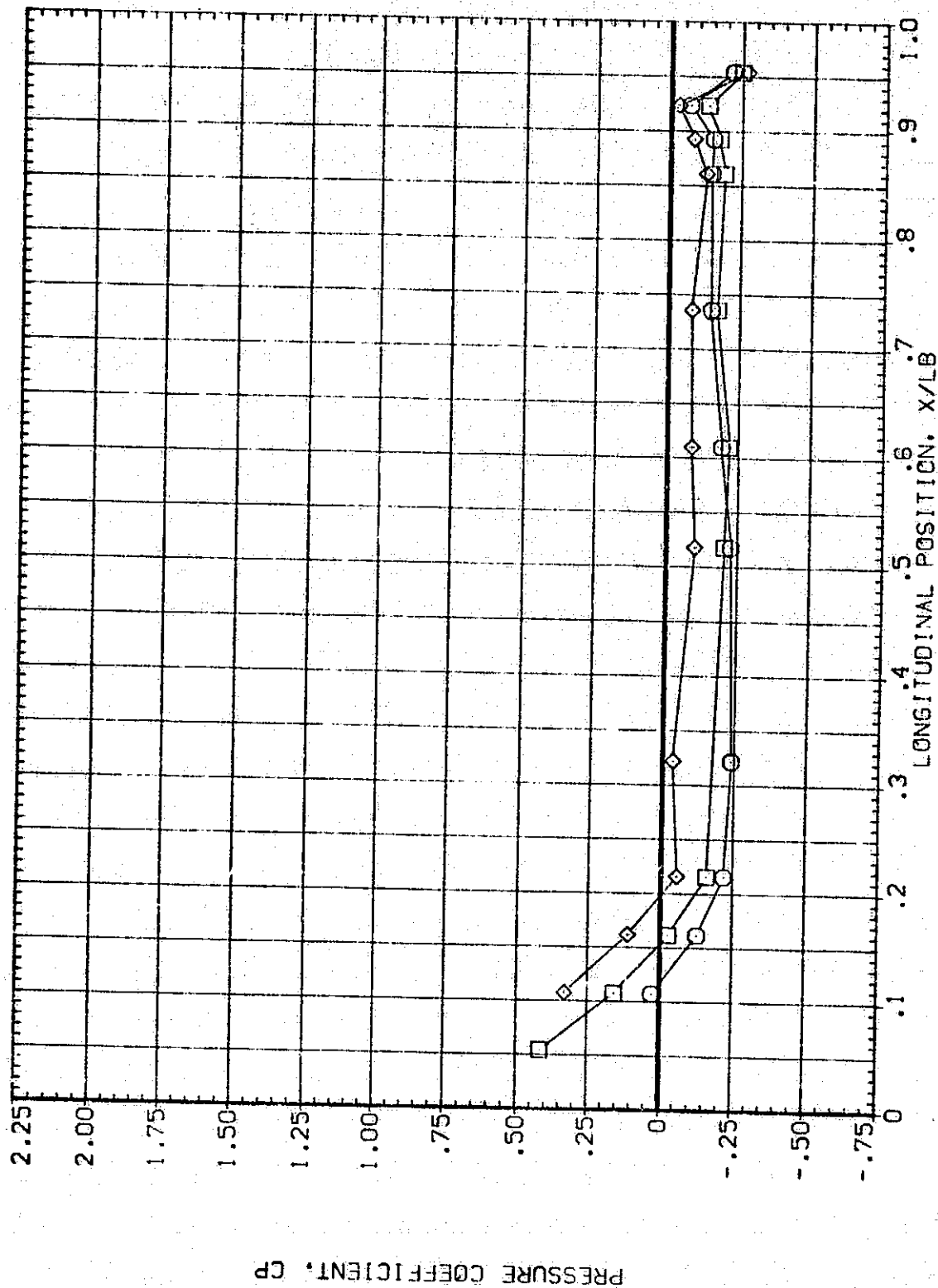


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (P1A038)

SYMBOL

THEIA 315.000  
326.000  
346.000

ALPHA 20.740

MACH 1.960

BETA MOUNT

PARAMETRIC VALUES  
.000 OFFSET  
1.000 PHI

20.000  
180.000

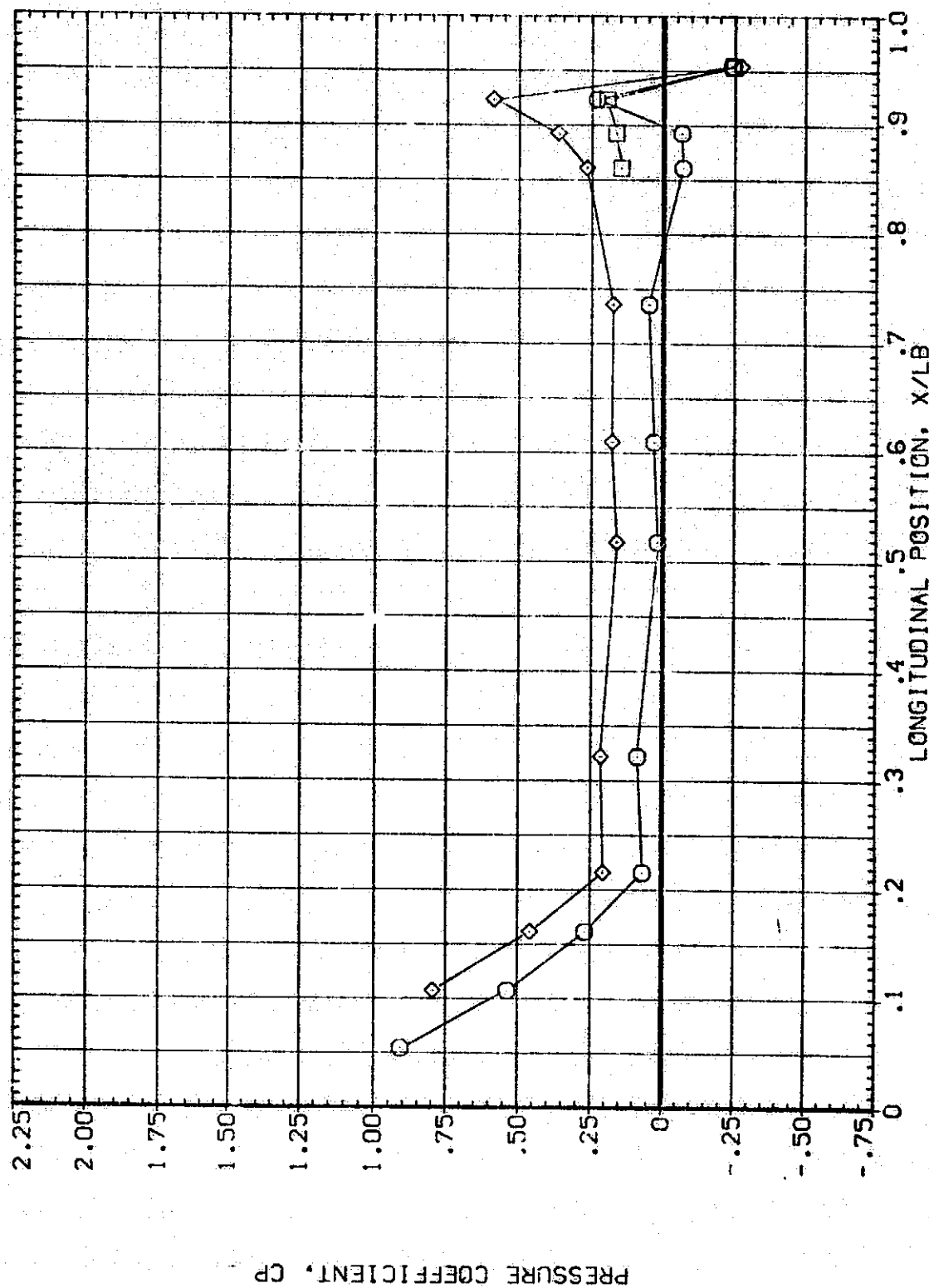


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA039)

SYMBOL	THETA		ALPHA	HACH	PARAMETRIC VALUES	
	.000	14.000			BETA	PHI
○			24.870	1.960	20.000	180.000
□					1.000	
◇		24.000				

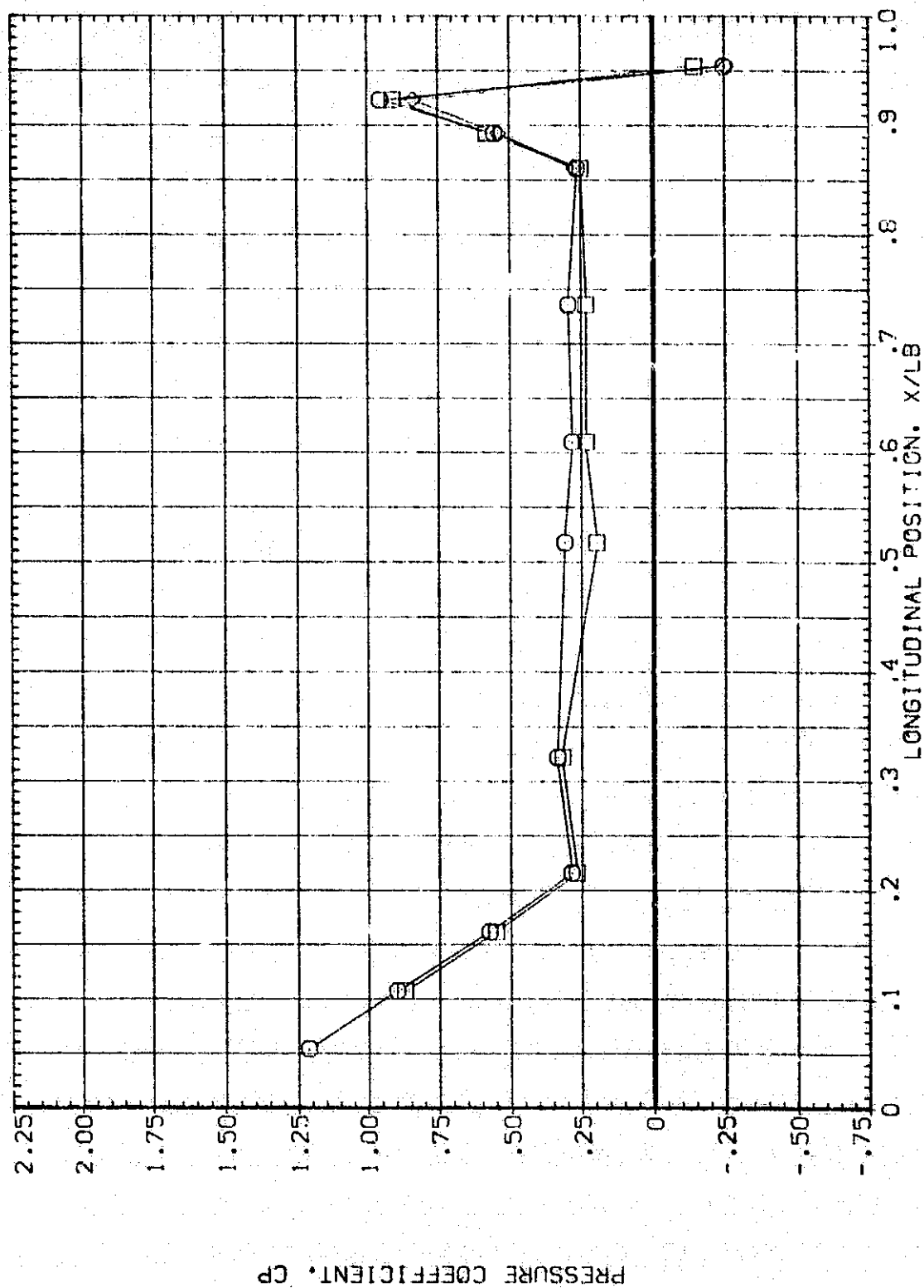


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

(PIA039)

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL  
○ □ ◇

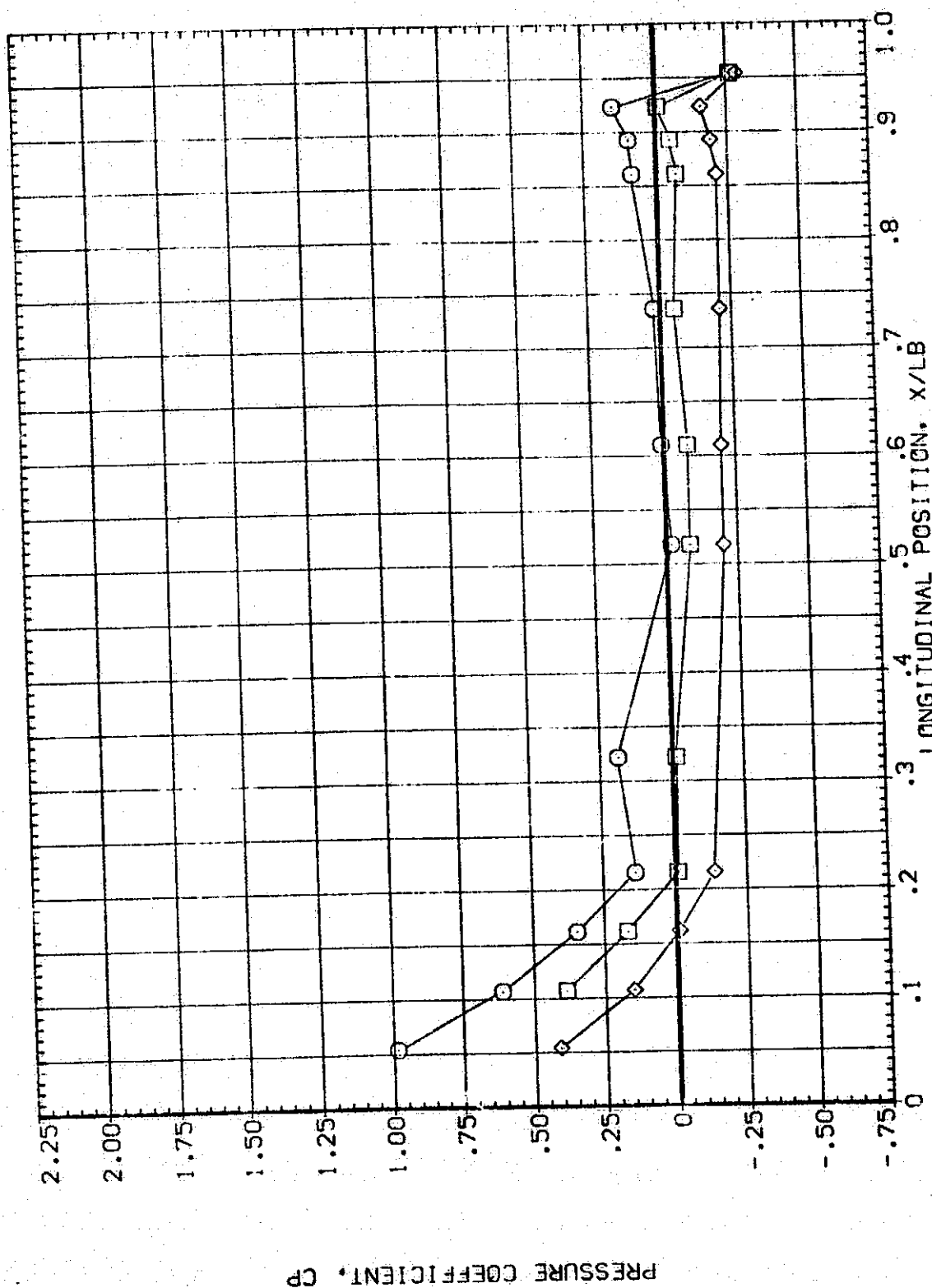
THETA  
45.000  
57.500  
90.000

ALPHA  
24.870

MACH  
1.960

BETA  
MOUNT

PARAMETRIC VALUES  
.000 .000 20.000  
1.000 .000 180.000  
PHI



REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES





MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA039)

SYMBOL  
◇ □ ○

THETA  
112.500  
135.000  
157.500

ALPHA  
24.870

MACH  
1.960

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
20.000  
180.000

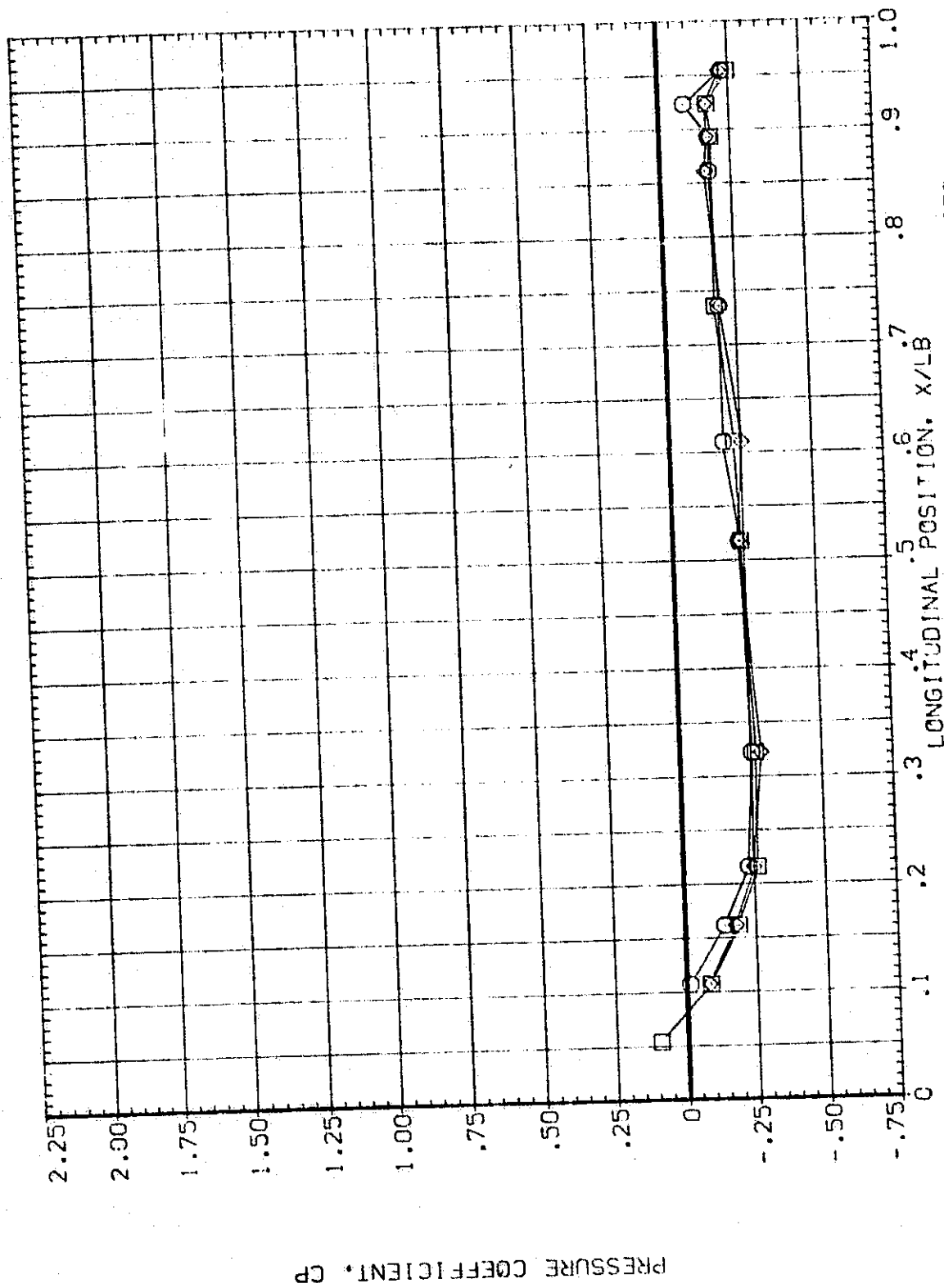


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 190.000  
 202.500  
 225.000

ALPHA  
 24.870

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 PH1

20.000  
 180.000

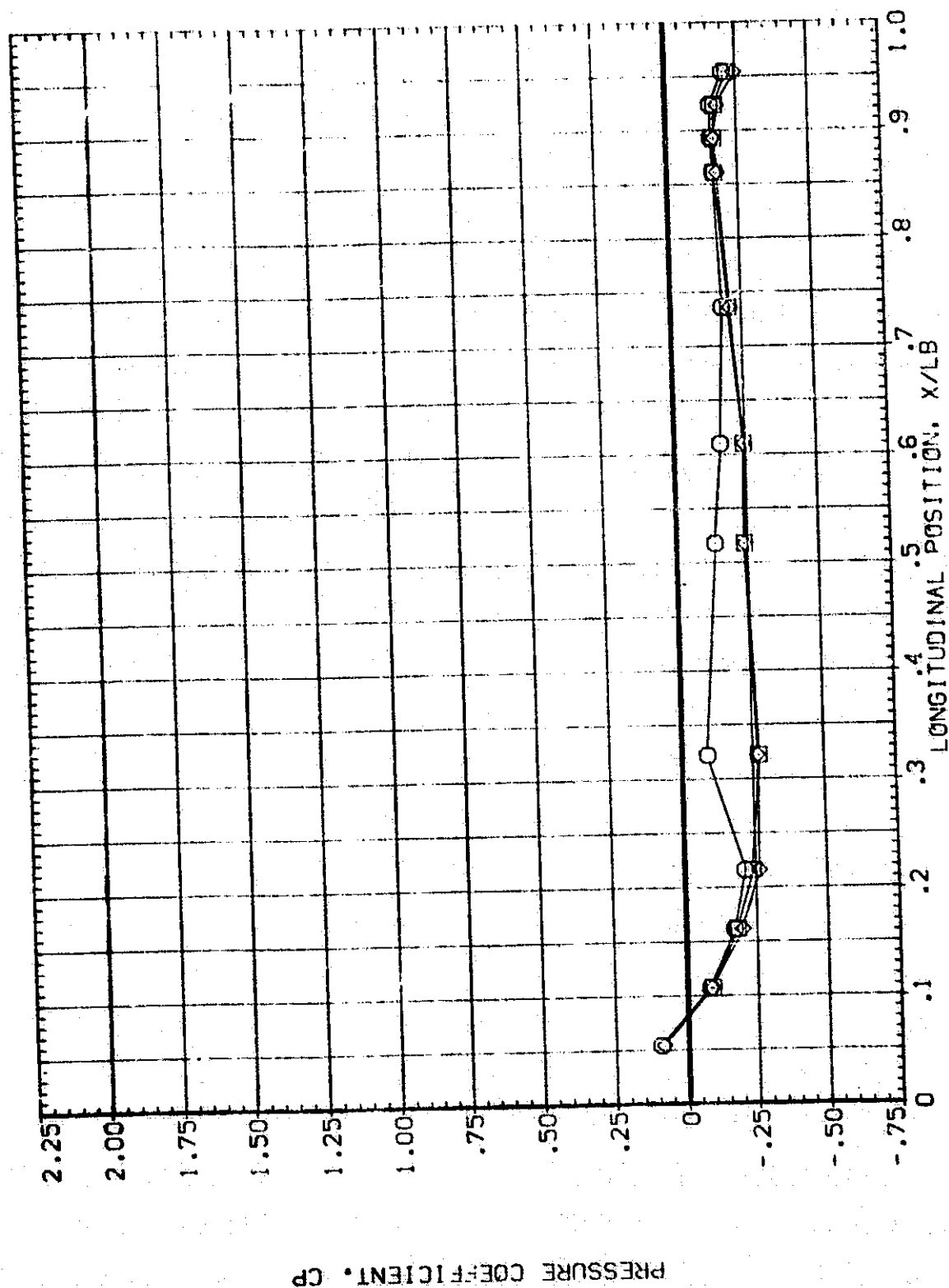


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A039)

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 180.000

BETA  
 MOUNT

THE TA ALPHA MACH  
 247.500 24.870 1.960  
 270.000  
 292.500

SYMBOL  
 ○  
 □  
 ◇

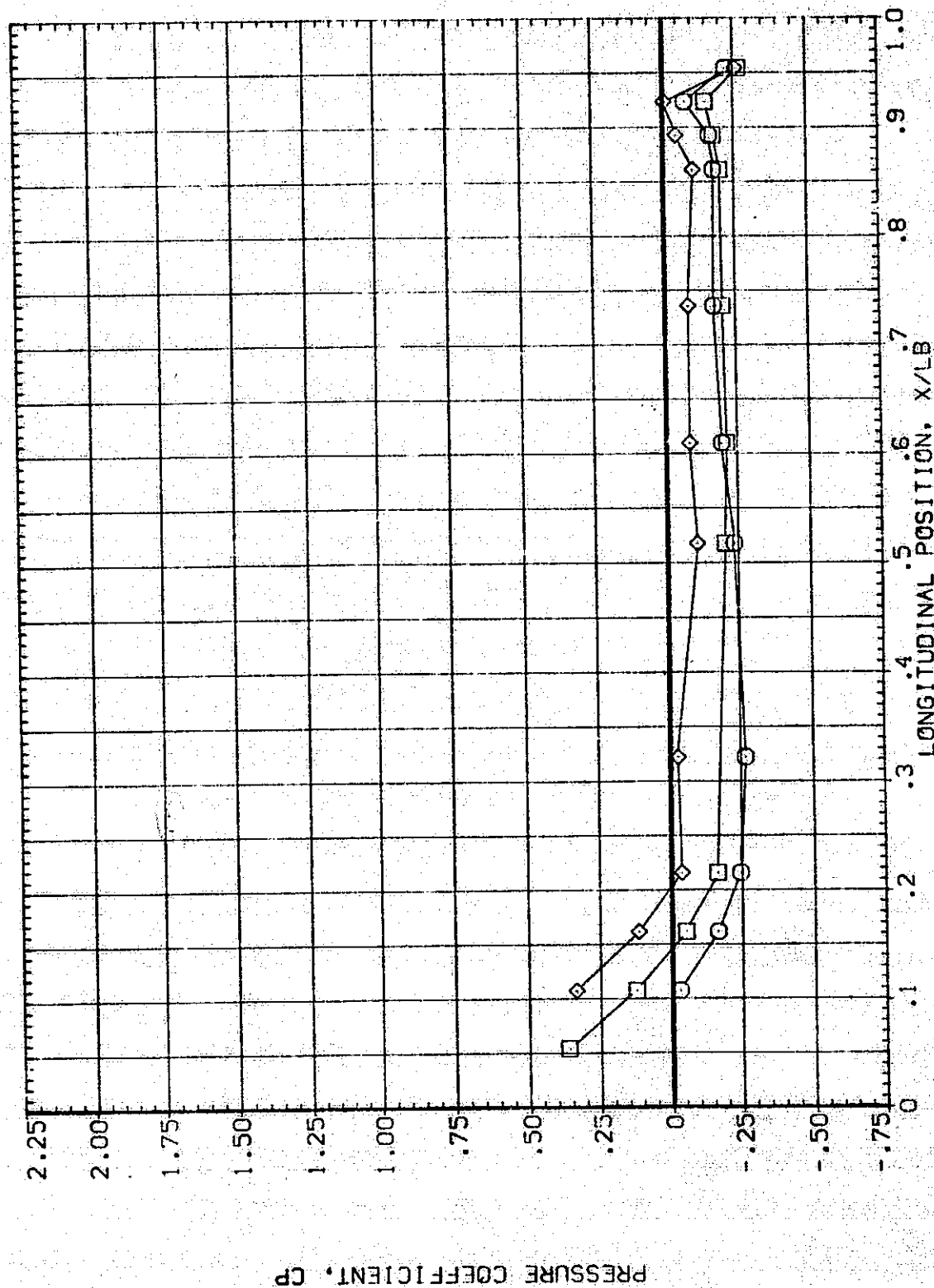


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA 315.000  
 325.000  
 345.000

ALPHA 24.870

MACH 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 180.000  
 OFFSET  
 PHI

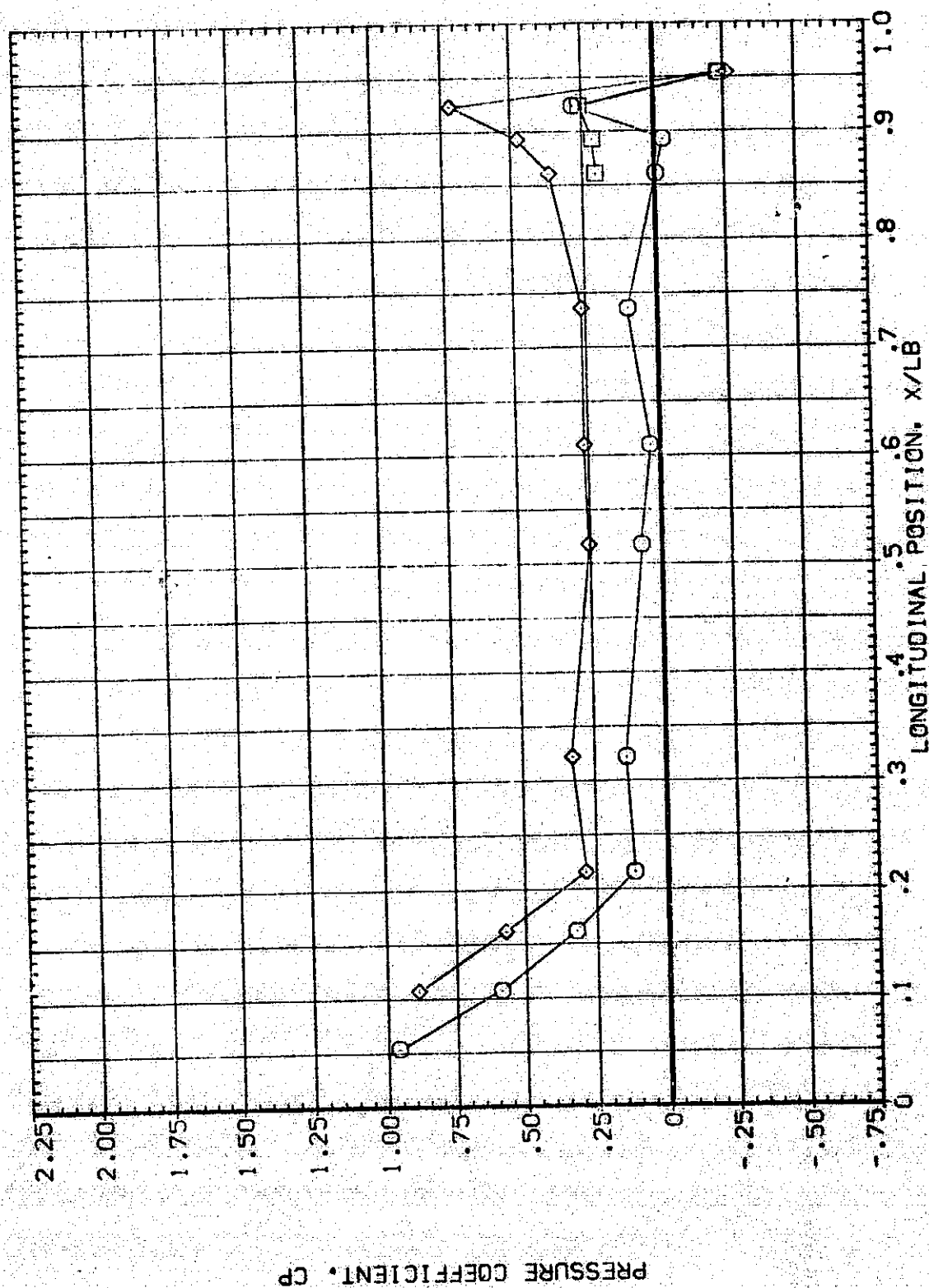


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA040)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	.000	28.930	1.960	.000	.000	20.000
□	14.000			1.000		180.000
◇	24.000					

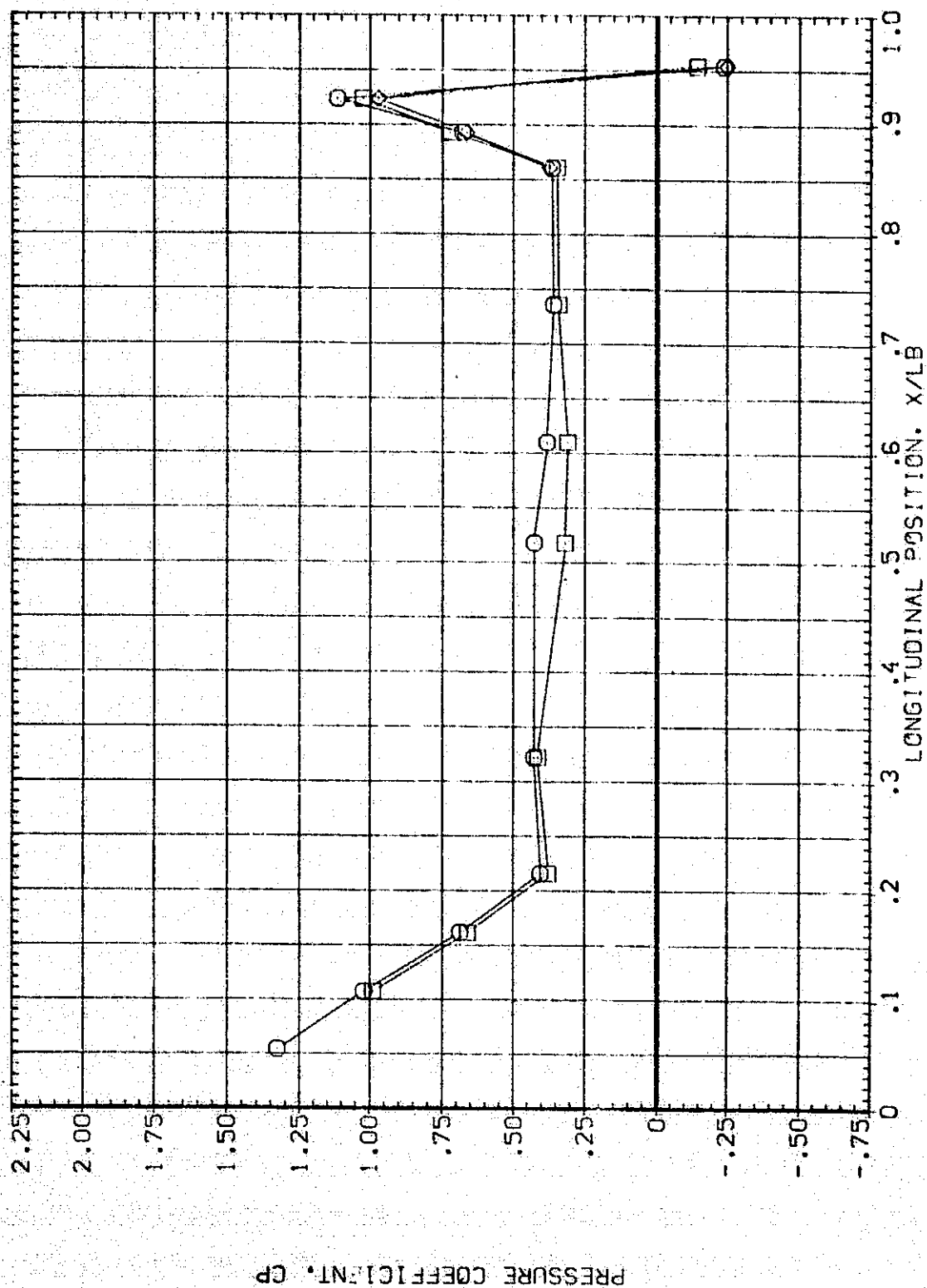


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL

THETA

ALPHA

MACH

BETA

PARAMETRIC VALUES

OFFSET

PHI

20.000

45.000

28.930

1.960

HOUNT

1.000

180.000

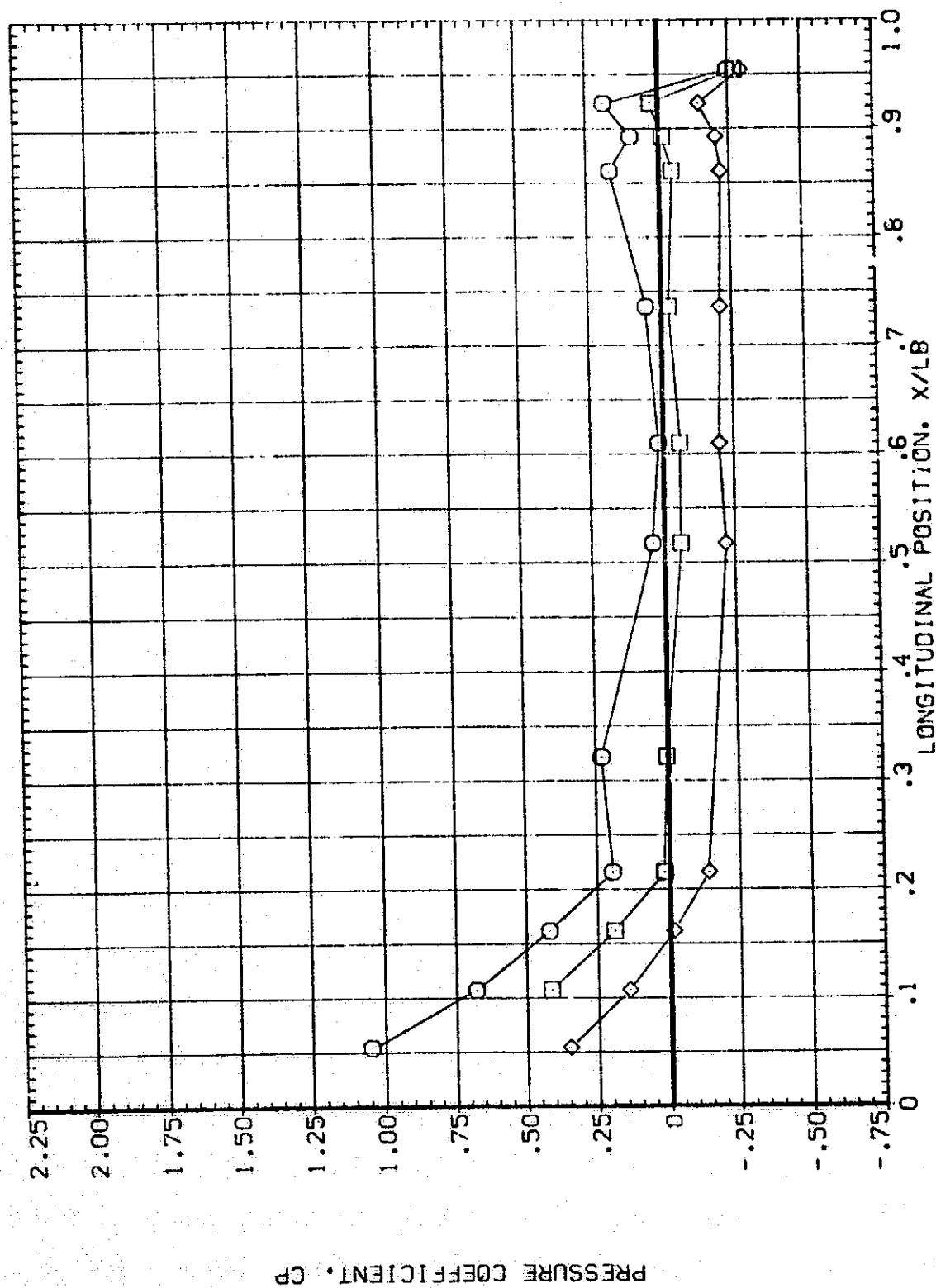


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA040)

SYMBOL

THETA  
112.500  
135.000  
157.500

ALPHA  
28.930  
MACH  
1.960

BETA  
MOUNT  
PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
20.000  
180.000

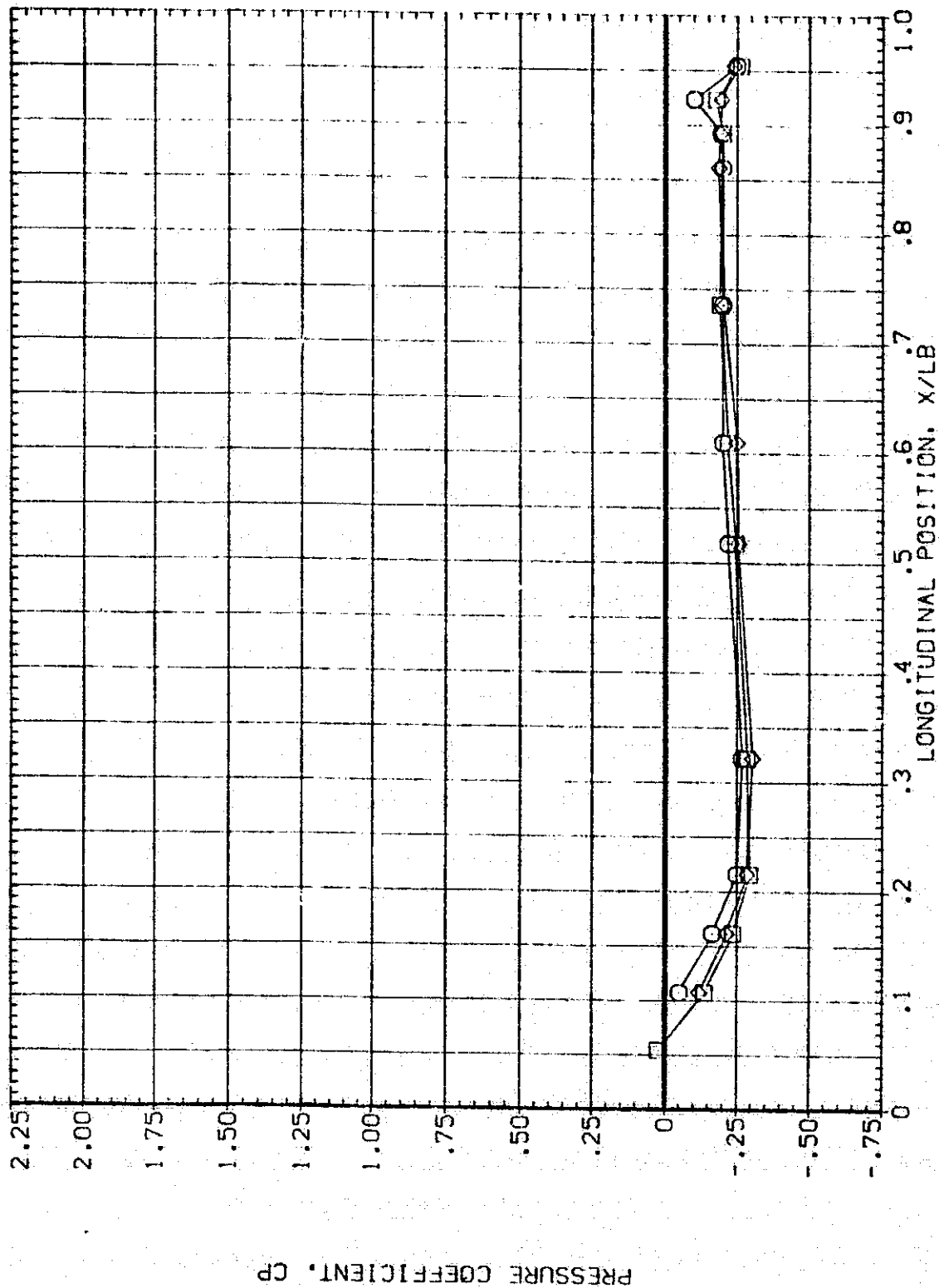


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES





MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1

(P1A040)

SYMBOL

○ □ ◇

THETA  
247.500  
270.000  
292.500

ALPHA  
29.930

MACH  
1.960

PARAMETRIC VALUES

BETA  
PHUNT

.000  
1.000

OFFSET  
PHI

20.000  
180.000

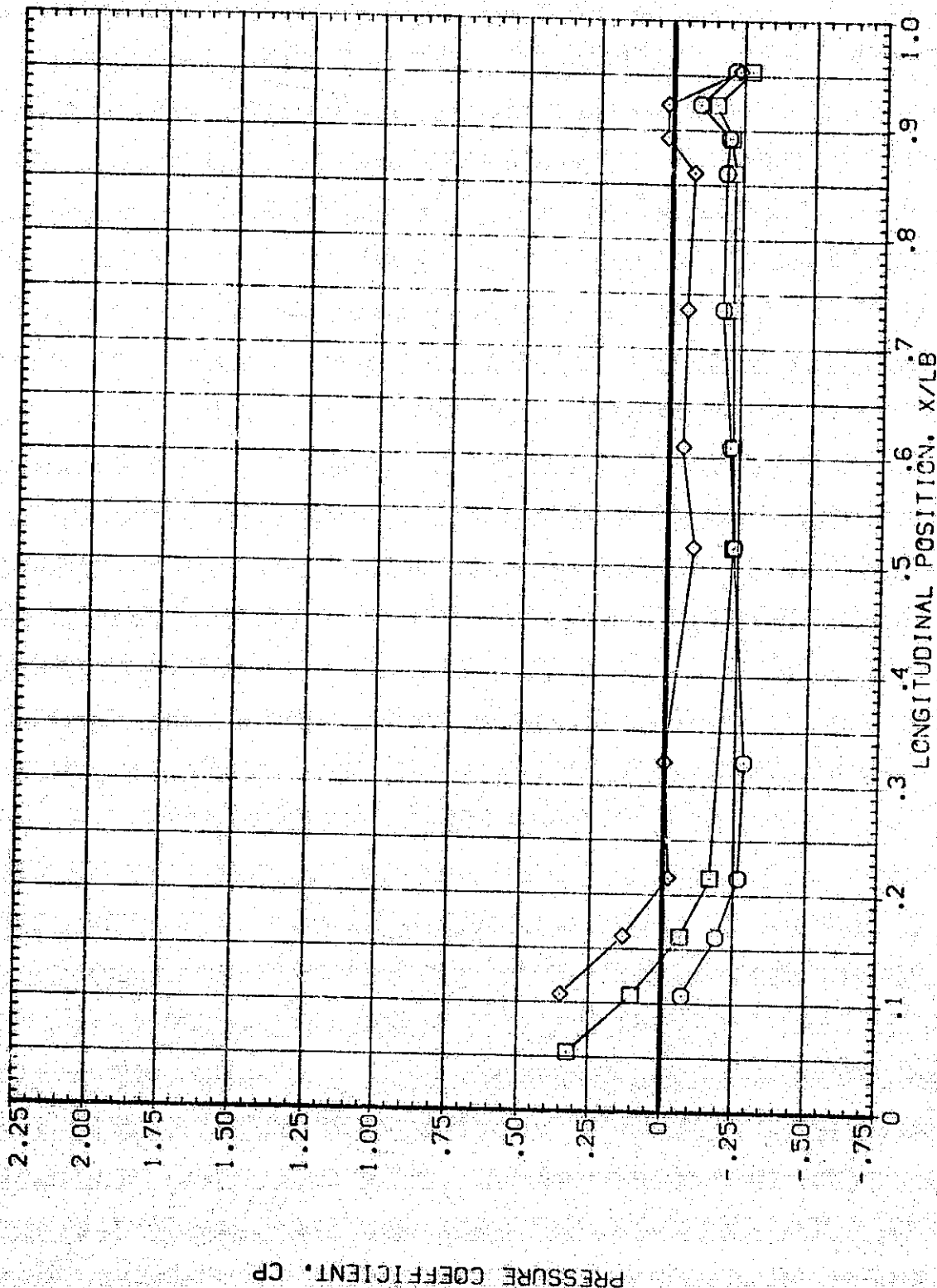


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 .000 OFFSET  
 1.000 PHI  
 20.000  
 180.000

BETA  
 MOUNT

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 28.930  
 MACH  
 1.960

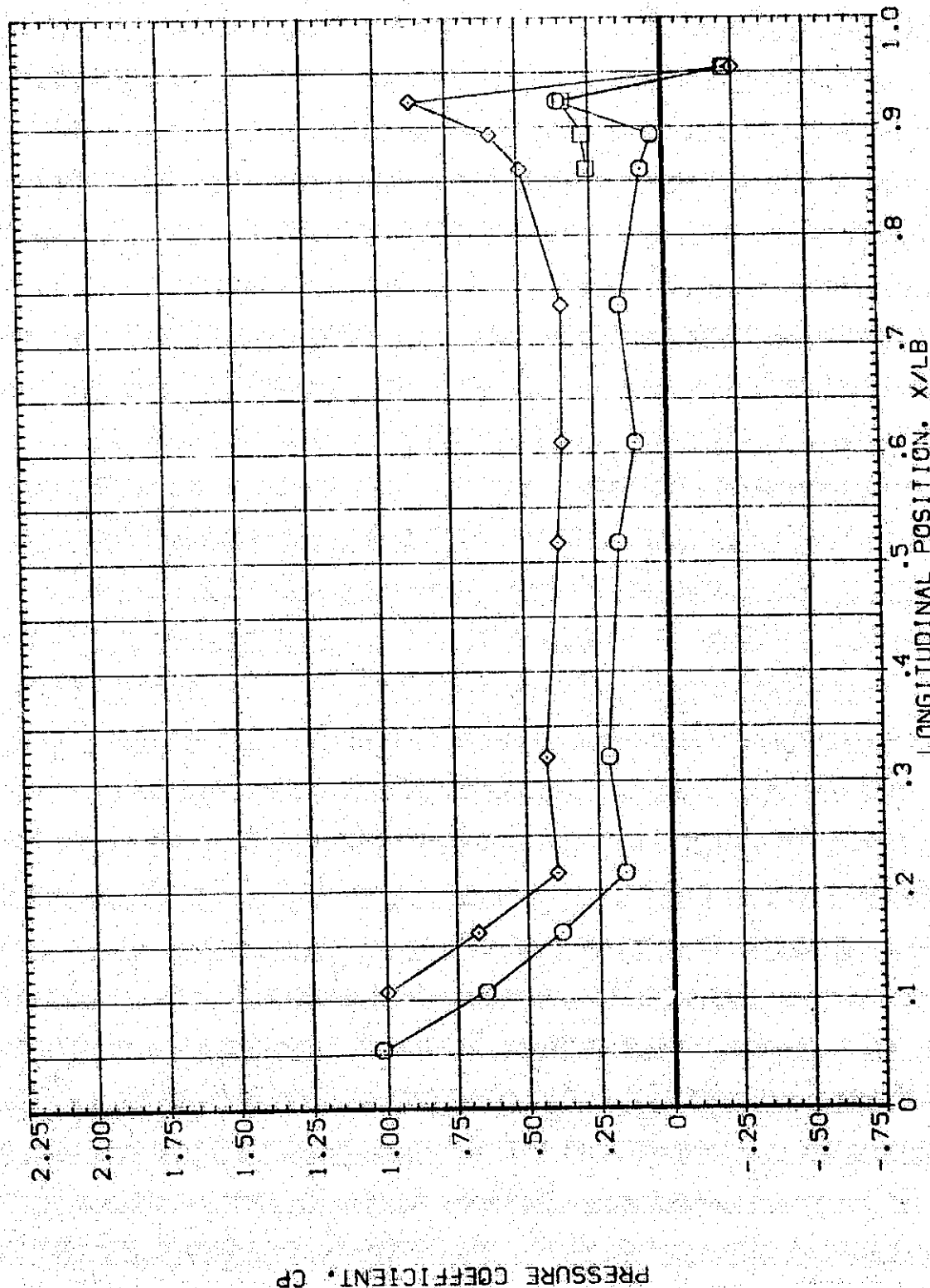


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A051)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	.000	-8.380	1.950	.000	.000	.000
□	14.000			1.000		270.000
◇	24.000					

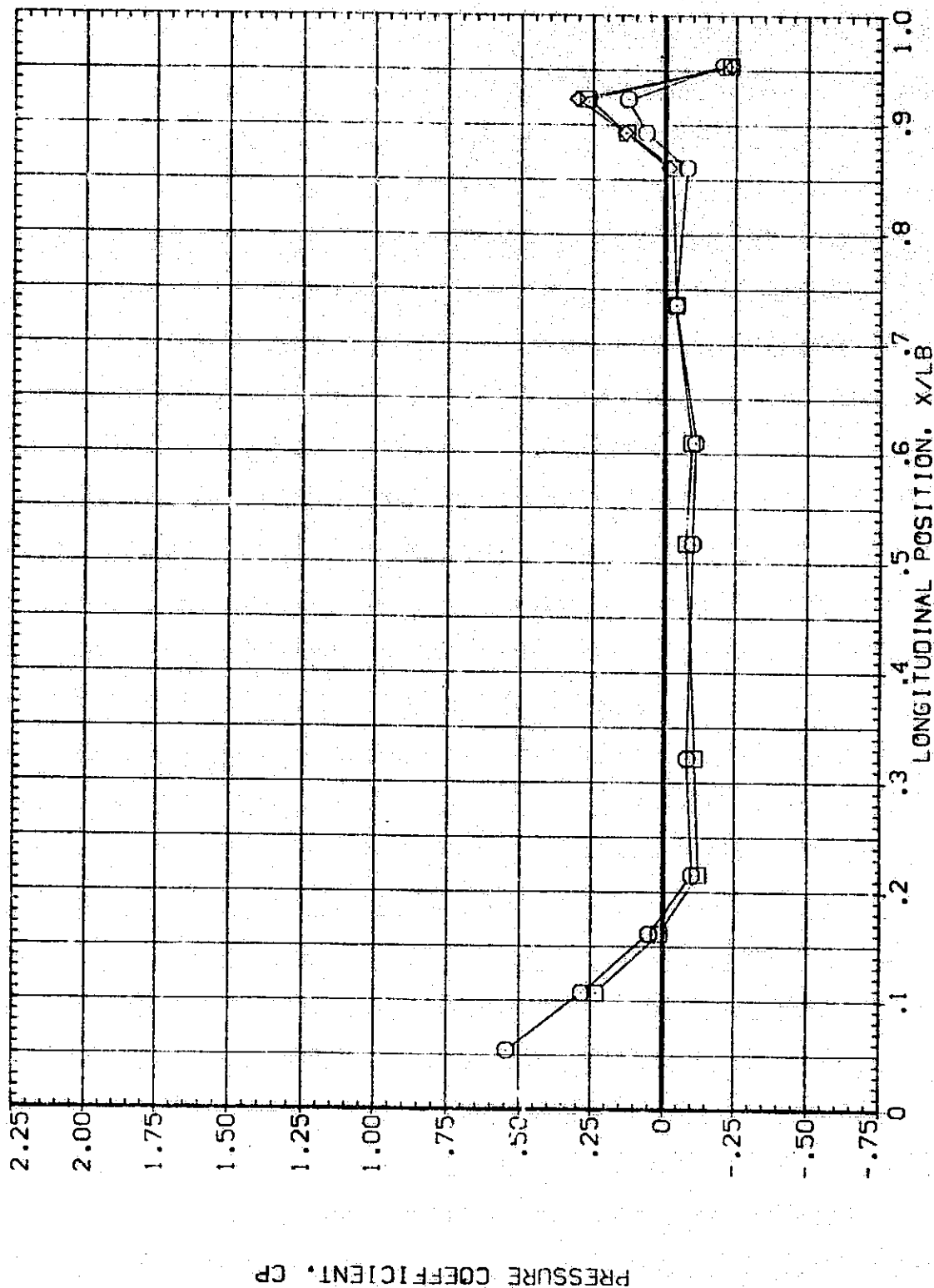


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

(P1A051)

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL  
◇  
□  
◇

THETA 45.000  
57.500  
90.000  
ALPHA -8.380  
MACH 1.950

PARAMETRIC VALUES  
BETA .000  
MOUNT 1.000  
PHI 270.000  
OFFSET .000

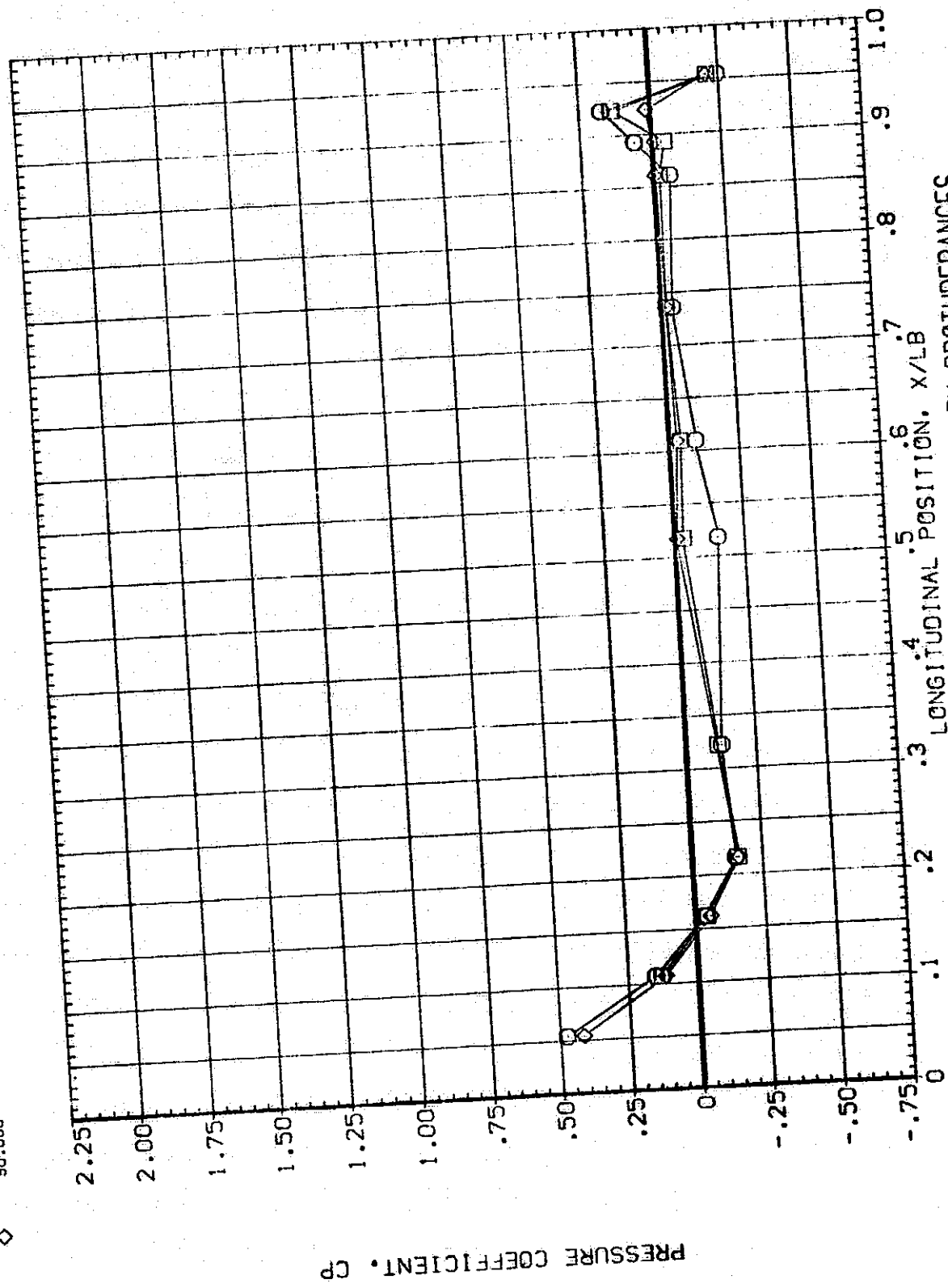


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA051)

SYMBOL  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 -8.380

MACH  
 1.950

PARAMETRIC VALUES  
 BETA  
 MOUNT

.000  
 1.000  
 270.000

OFFSET  
 PHI

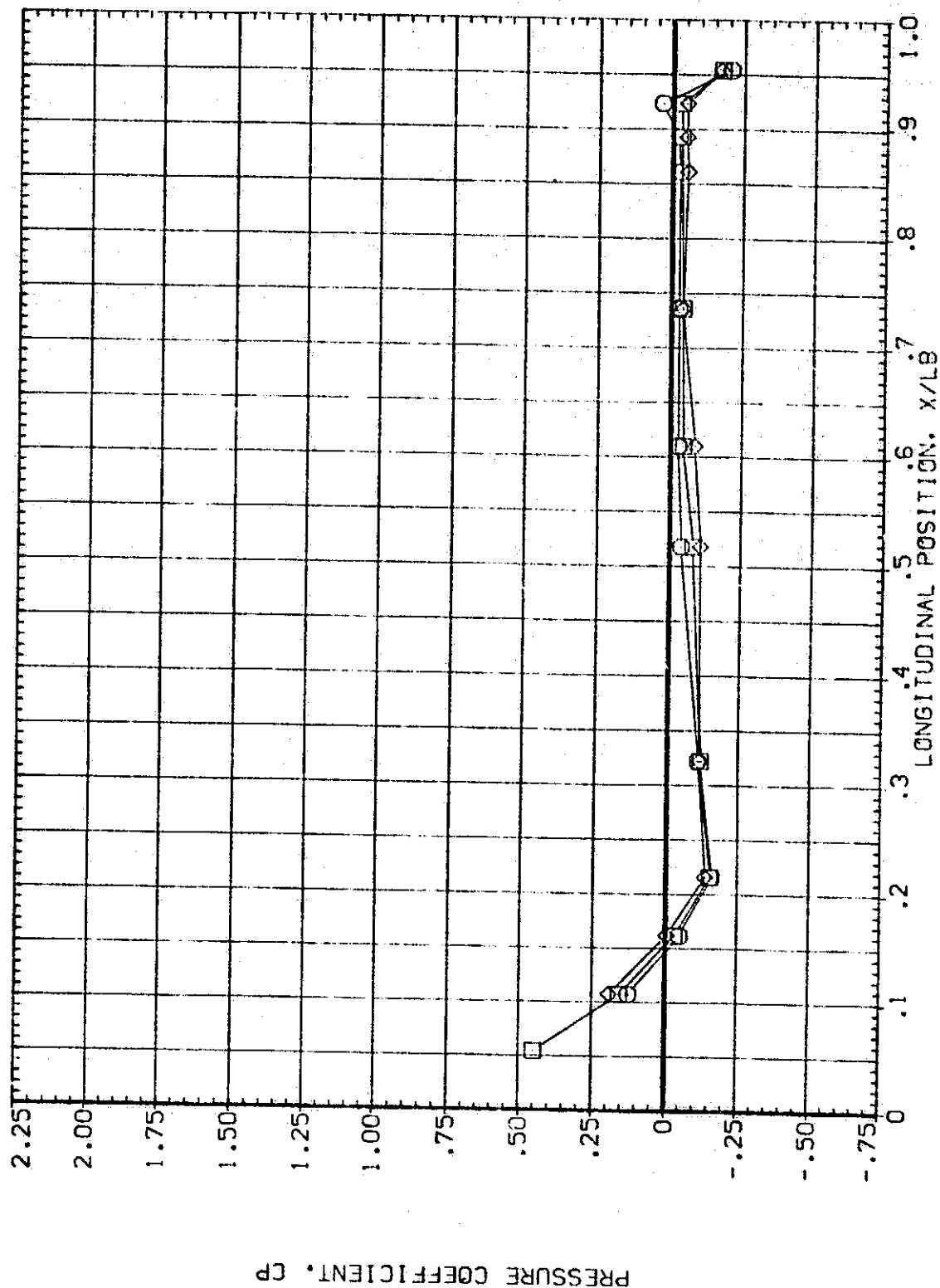


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A051)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	190.000	-8.380	1.950	.000	.000	.000
□	232.500			1.000		270.000
◇	225.000					

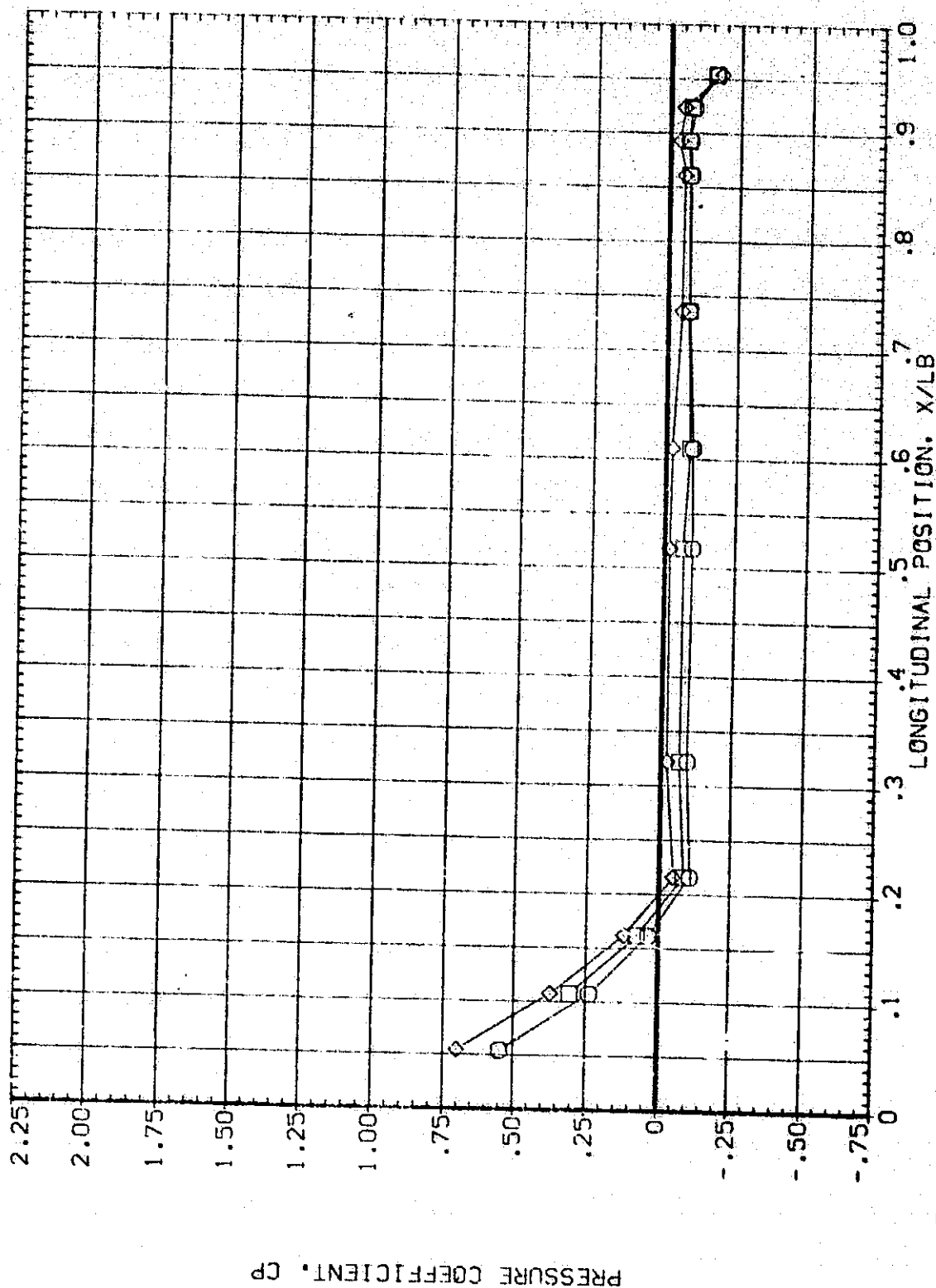


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA051)

SYMBOL THETA ALPHA MACH  
 O 247.500  
 □ 270.000  
 ◇ 292.500

BETA MOUNT  
 .000  
 1.000  
 .000  
 PHJ  
 270.000

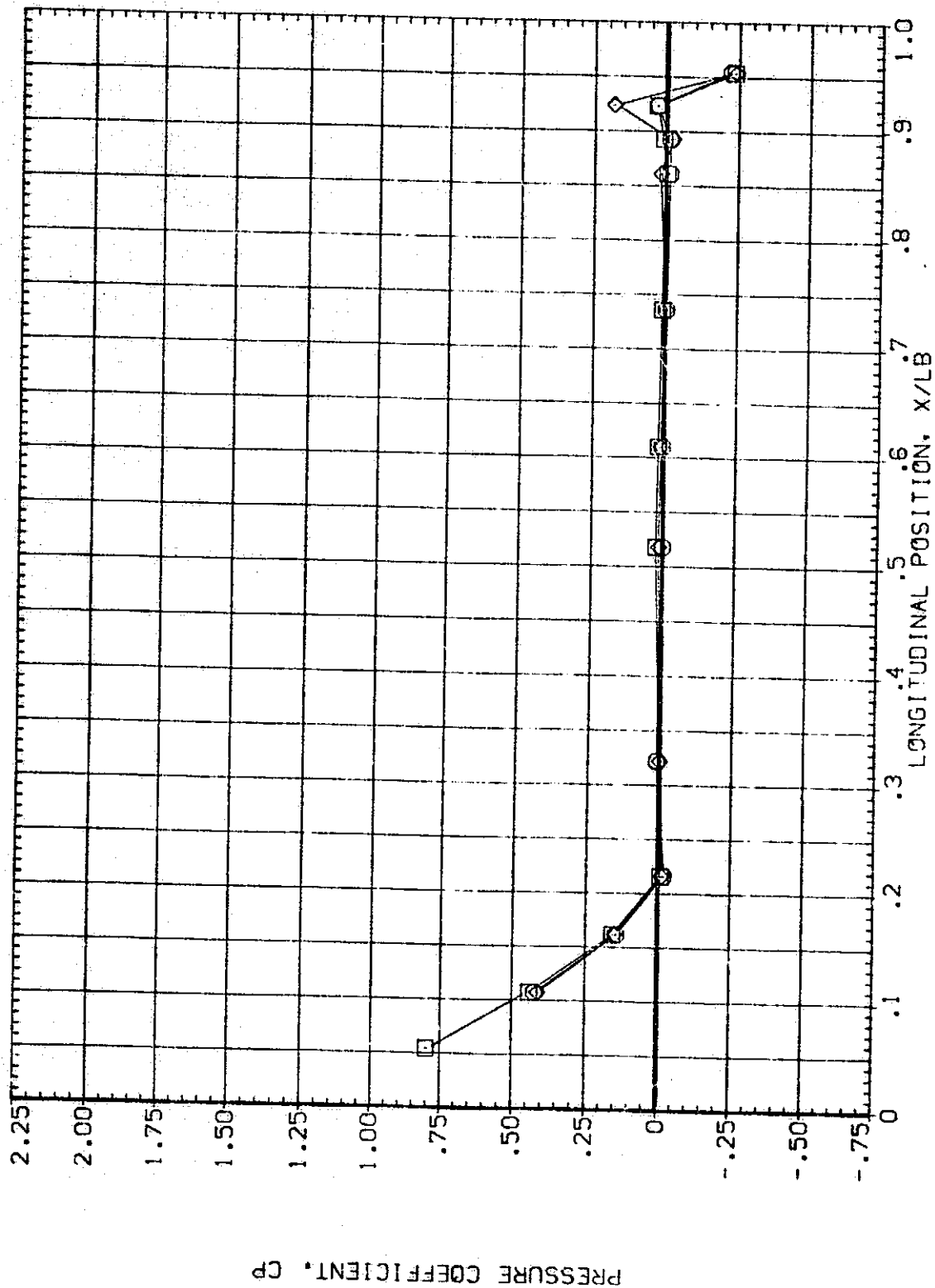


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 315.000  
 326.000  
 346.000

THETA  
 -8.380  
 MACH  
 1.950

PARAMETRIC VALUES  
 BETA  
 MOUNT  
 .000  
 .000  
 1.000  
 270.000  
 PHI

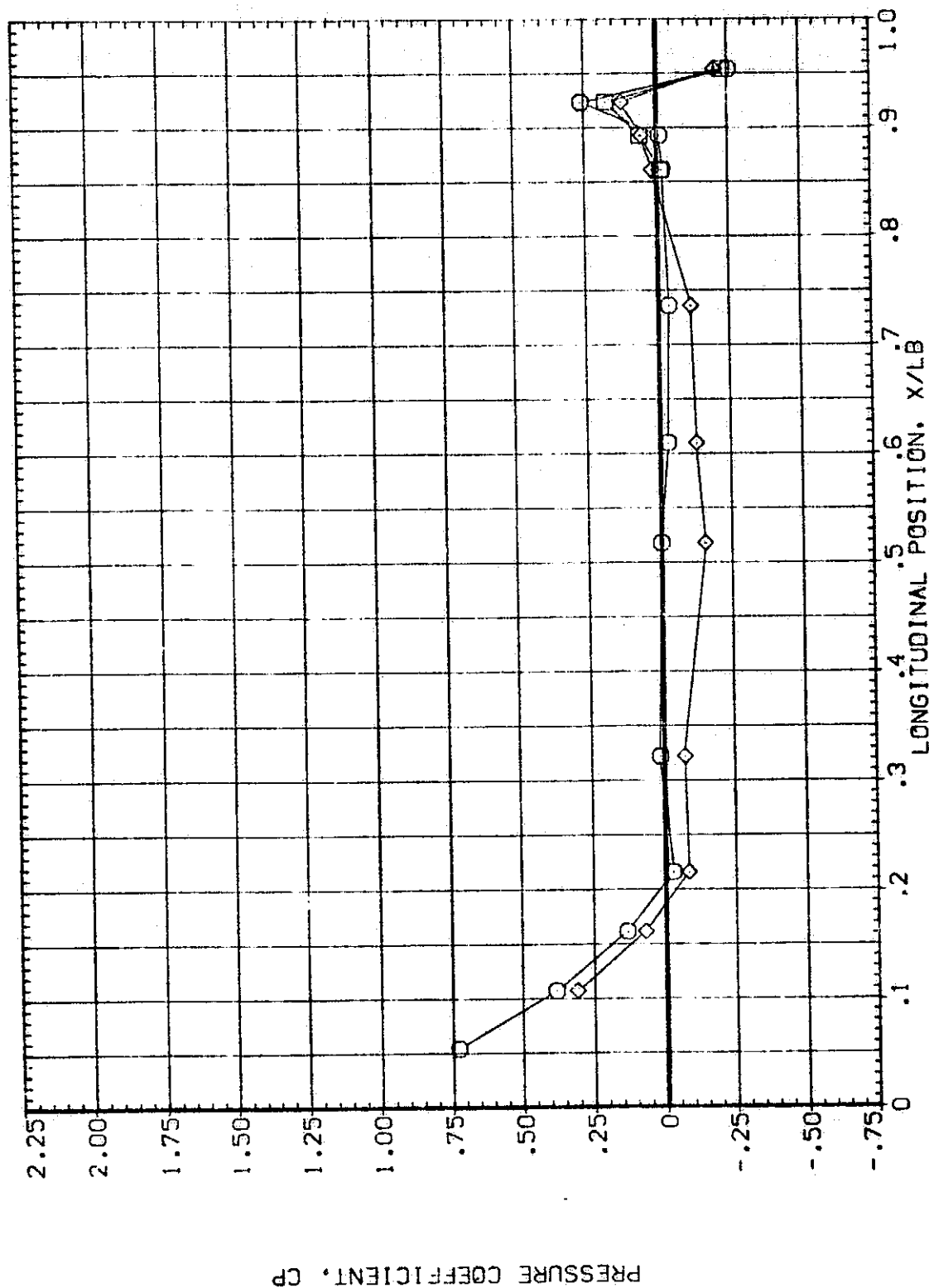


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A052)

SYMBOL

THETA  
-4.350

ALPHA  
1.960

MACH  
1.960

PARAMETRIC VALUES  
BETA  
MOUNT

1.000  
270.000

PHI  
270.000

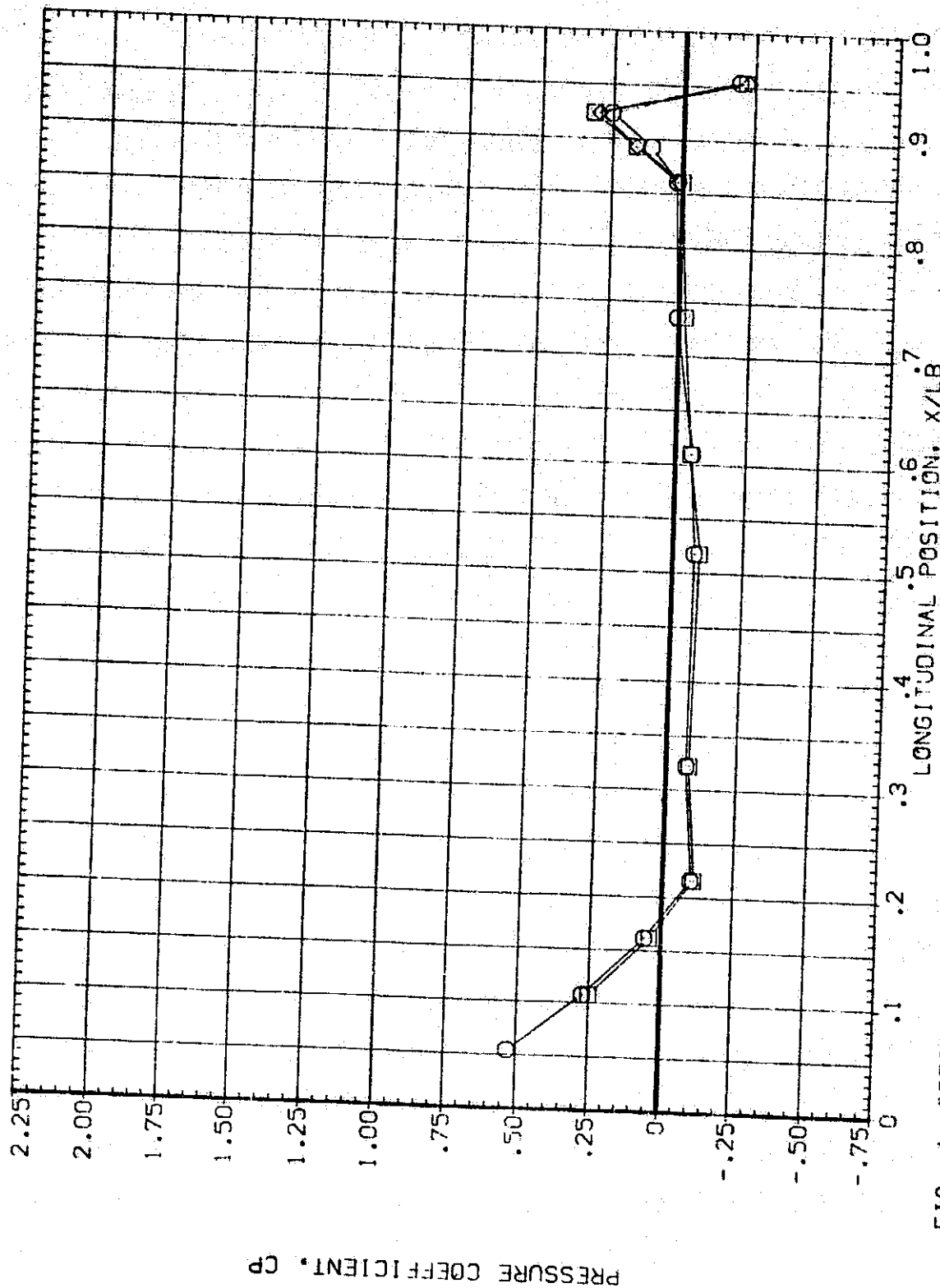


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 45.000  
 57.500  
 90.000

THETA  
 ALPHA  
 -4.350

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 PHI

.000  
 270.000

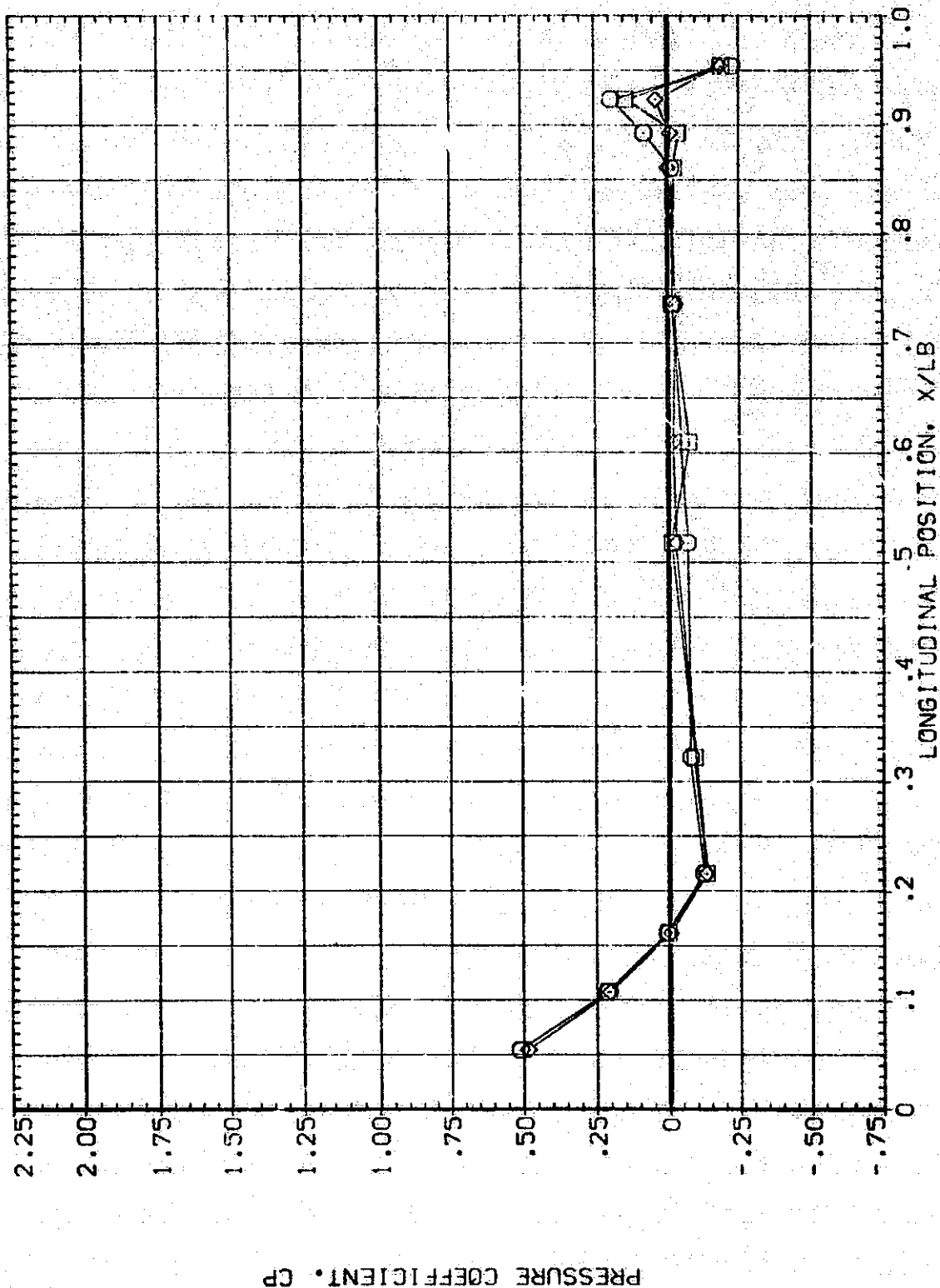


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCE

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MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A052)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	-4.350	1.960	.000	.000	.000
□	135.000			1.000		270.000
◇	157.500					

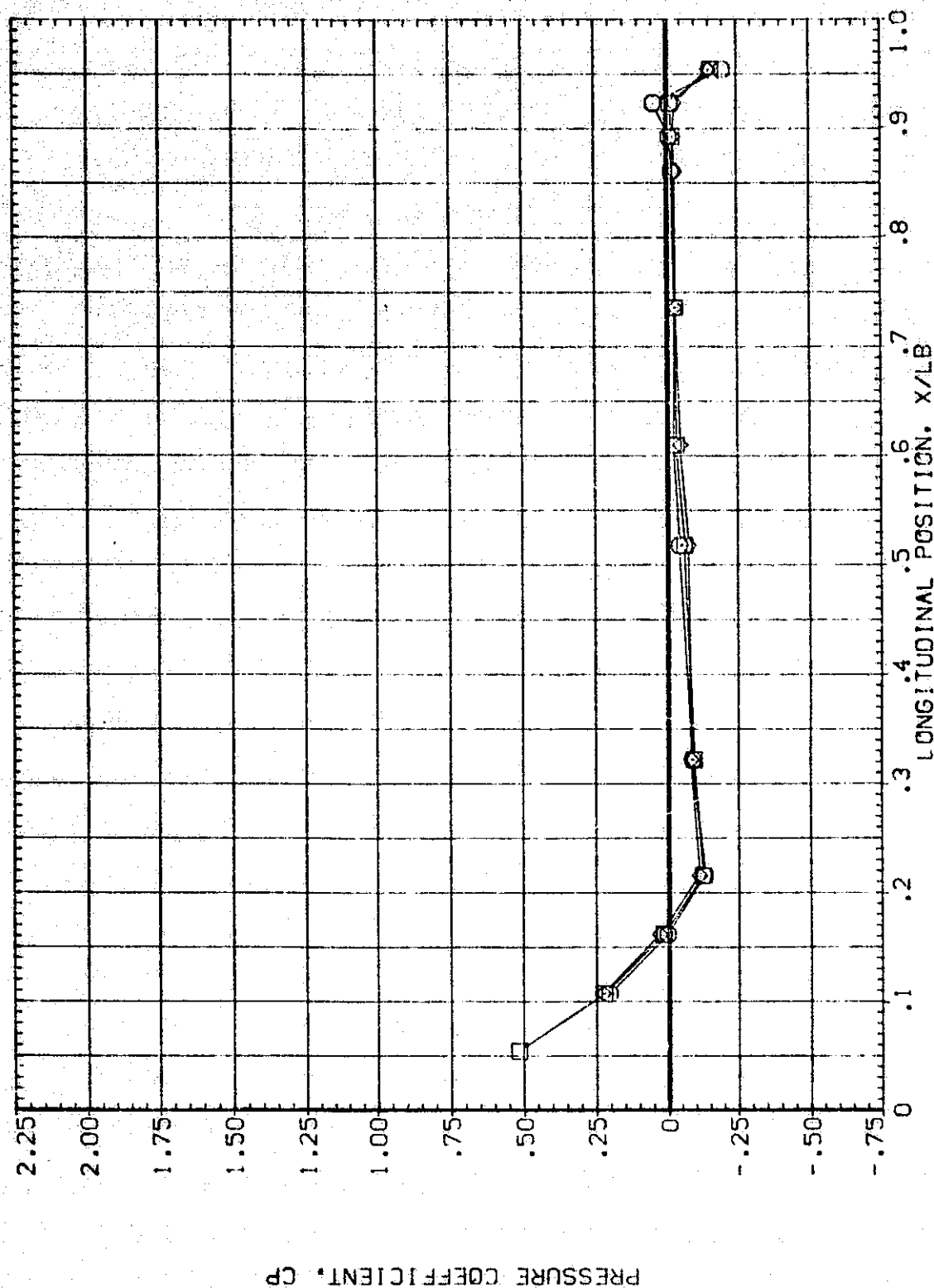


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
○  
□  
◇

THETA  
130.000  
202.500  
225.000

ALPHA  
-4.350

MACH  
1.960

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
270.000  
OFFSET  
PHI

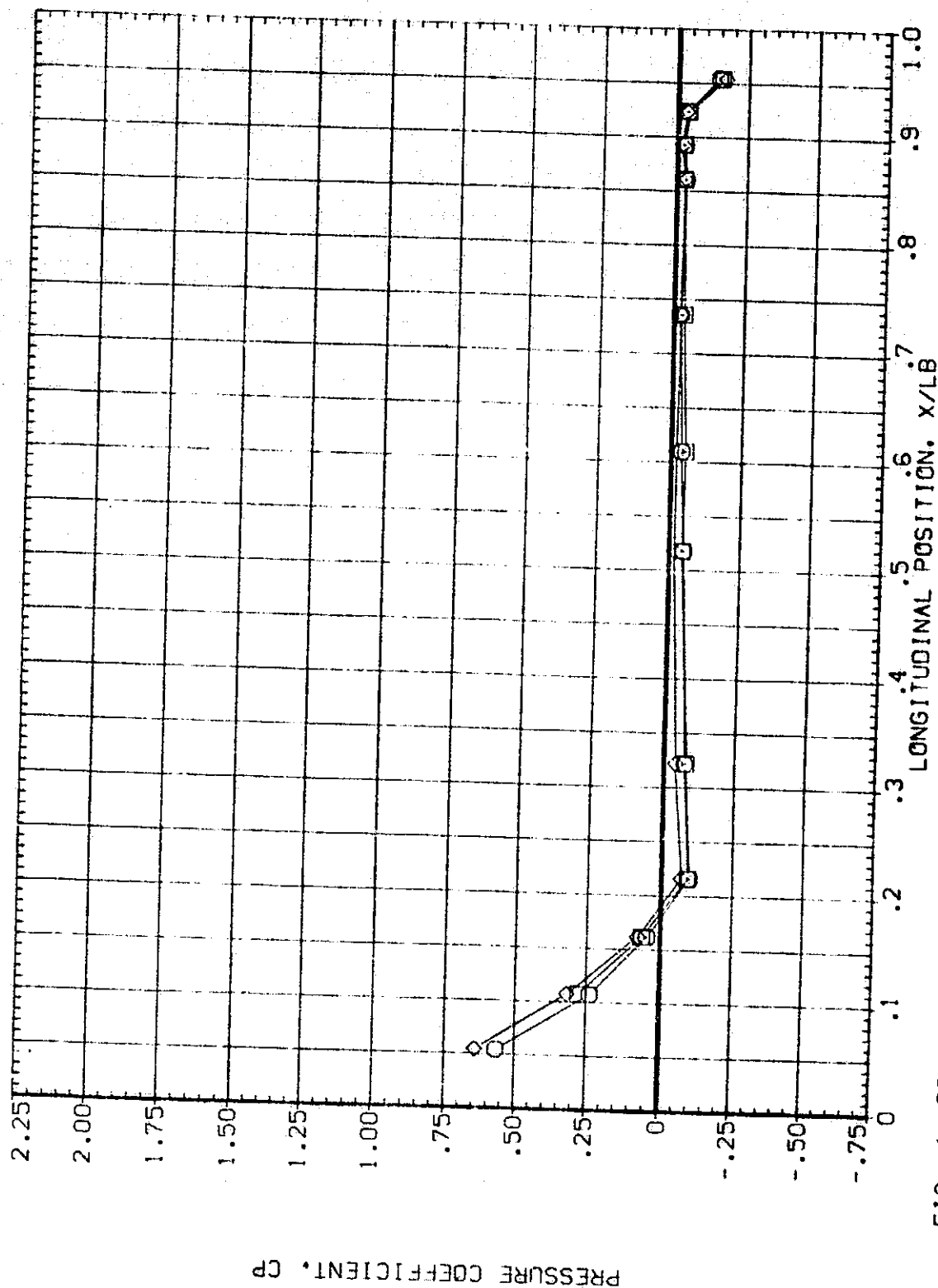


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA052)

SYMBOL THETA ALPHA MACH  
 □ 247.500 -4.350 1.960  
 ○ 270.000  
 ◇ 292.500

PARAMETRIC VALUES  
 BETA .000 .000 .000  
 MOUNT 1.000 PH1 270.000

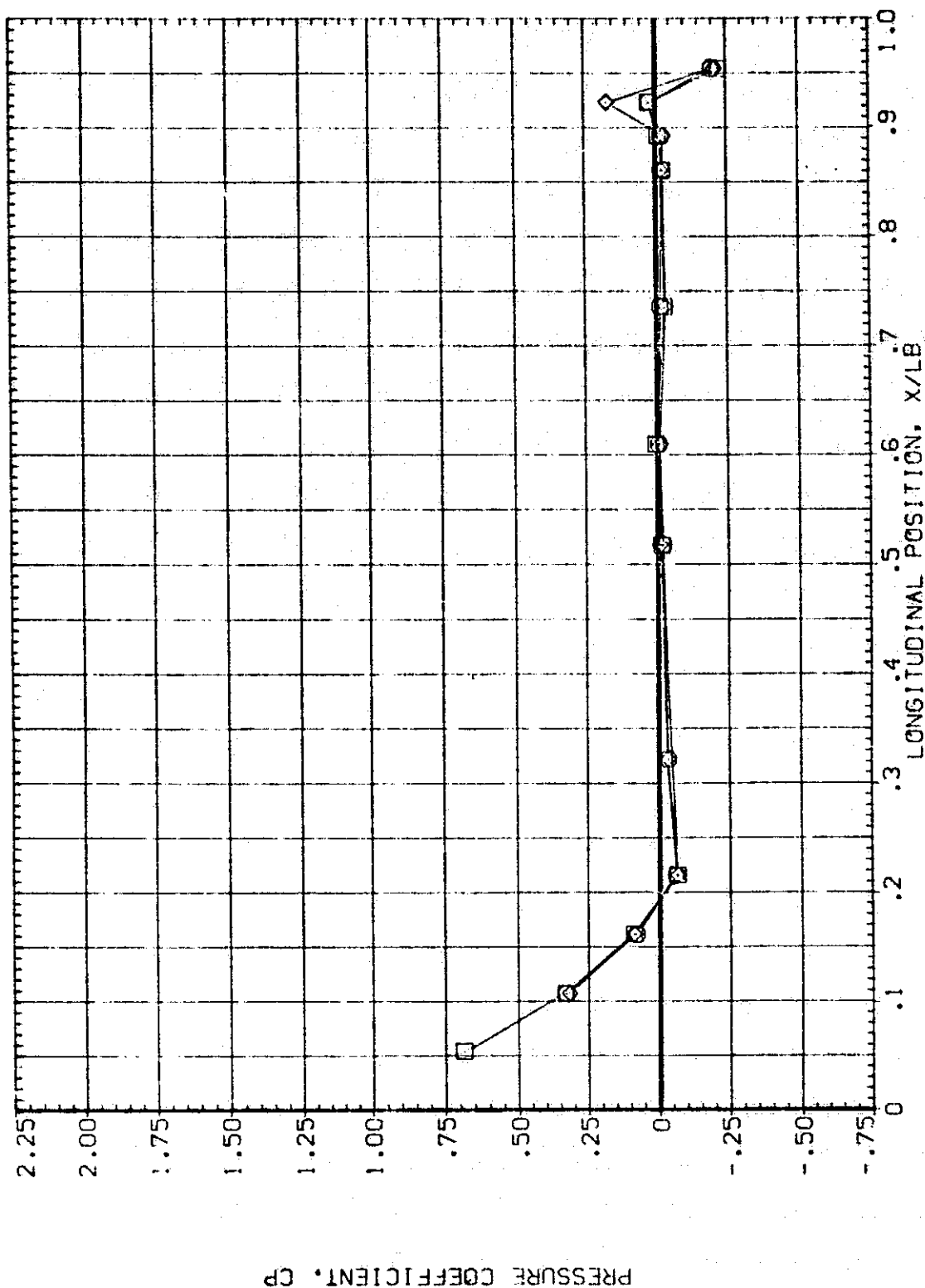


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 -4.350

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI

.000  
 270.000

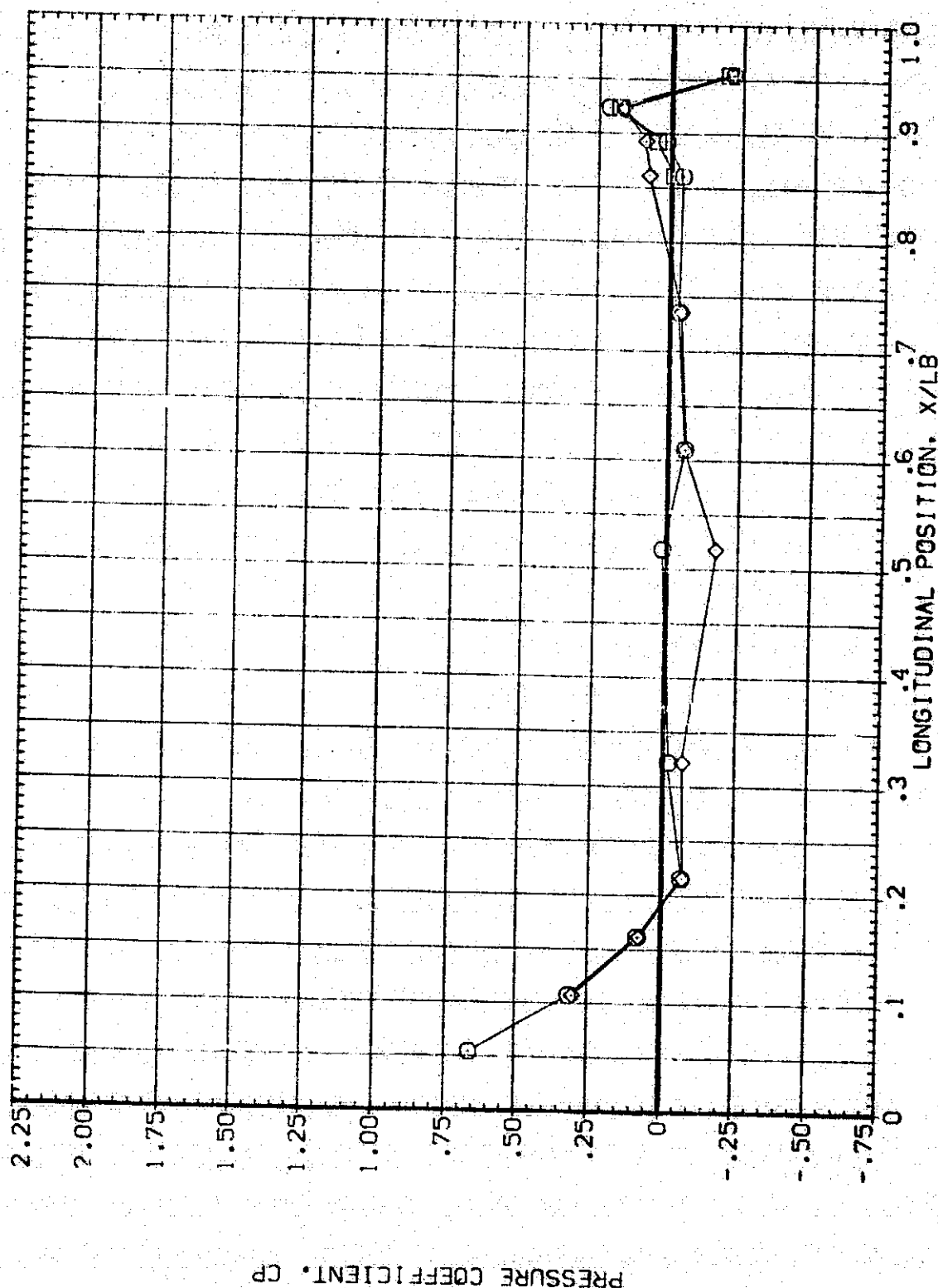


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A053)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	.000	-.280	1.960	.000	.000	.000
◇	14.000			1.000		270.000
◇	24.000					

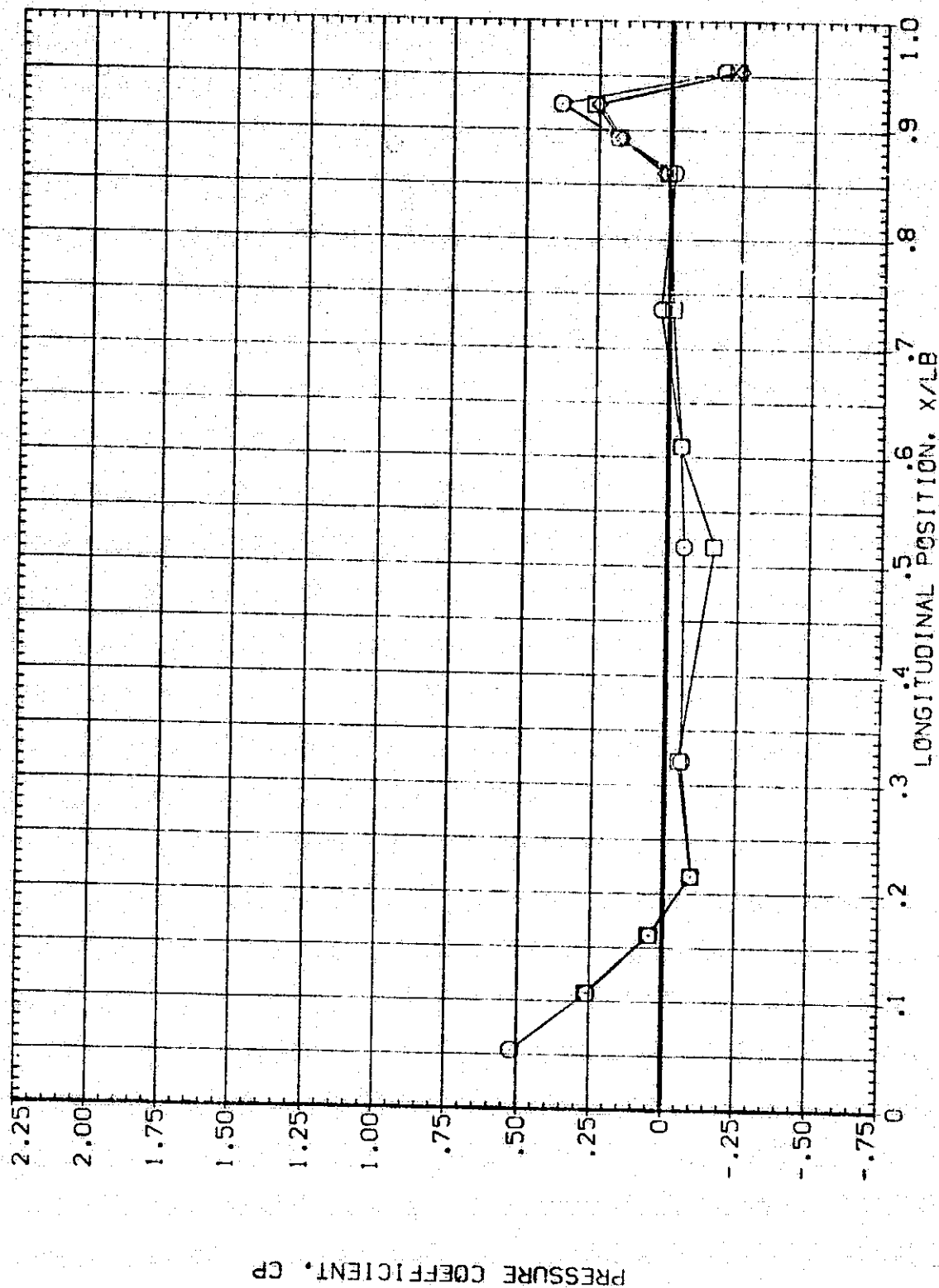


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	45.000	-.280	1.960	MOUNT	.000 OFFSET .000
□	57.500				1.000 PHI 270.000
◇	90.000				

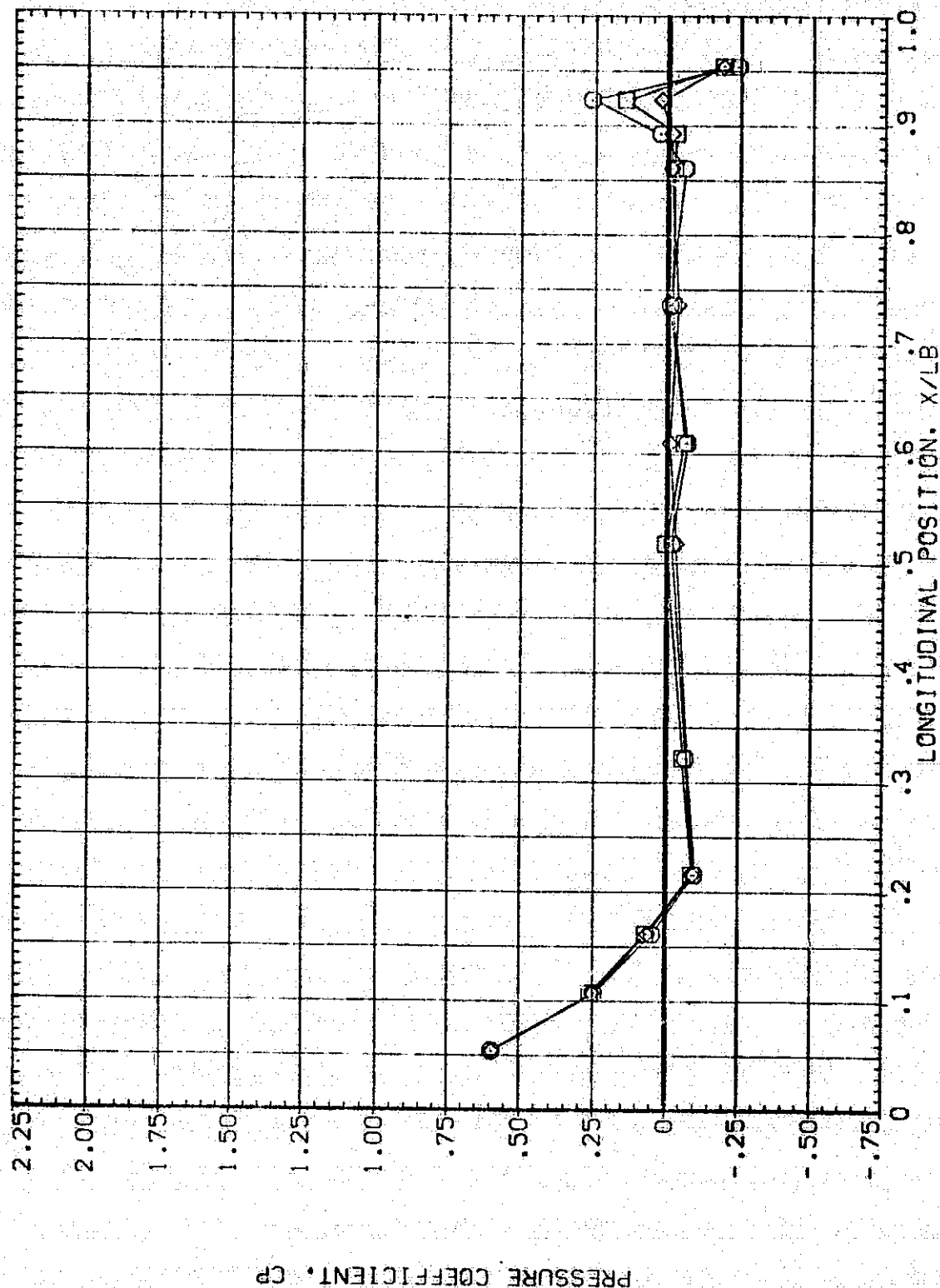


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA053)

SYMBOL  
 ◇  
 □  
 ○

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 -.280

MACH  
 1.960

PARAMETRIC VALUES  
 BETA  
 MOUNT  
 .000  
 1.000  
 OFFSET  
 PHI  
 270.000  
 .000

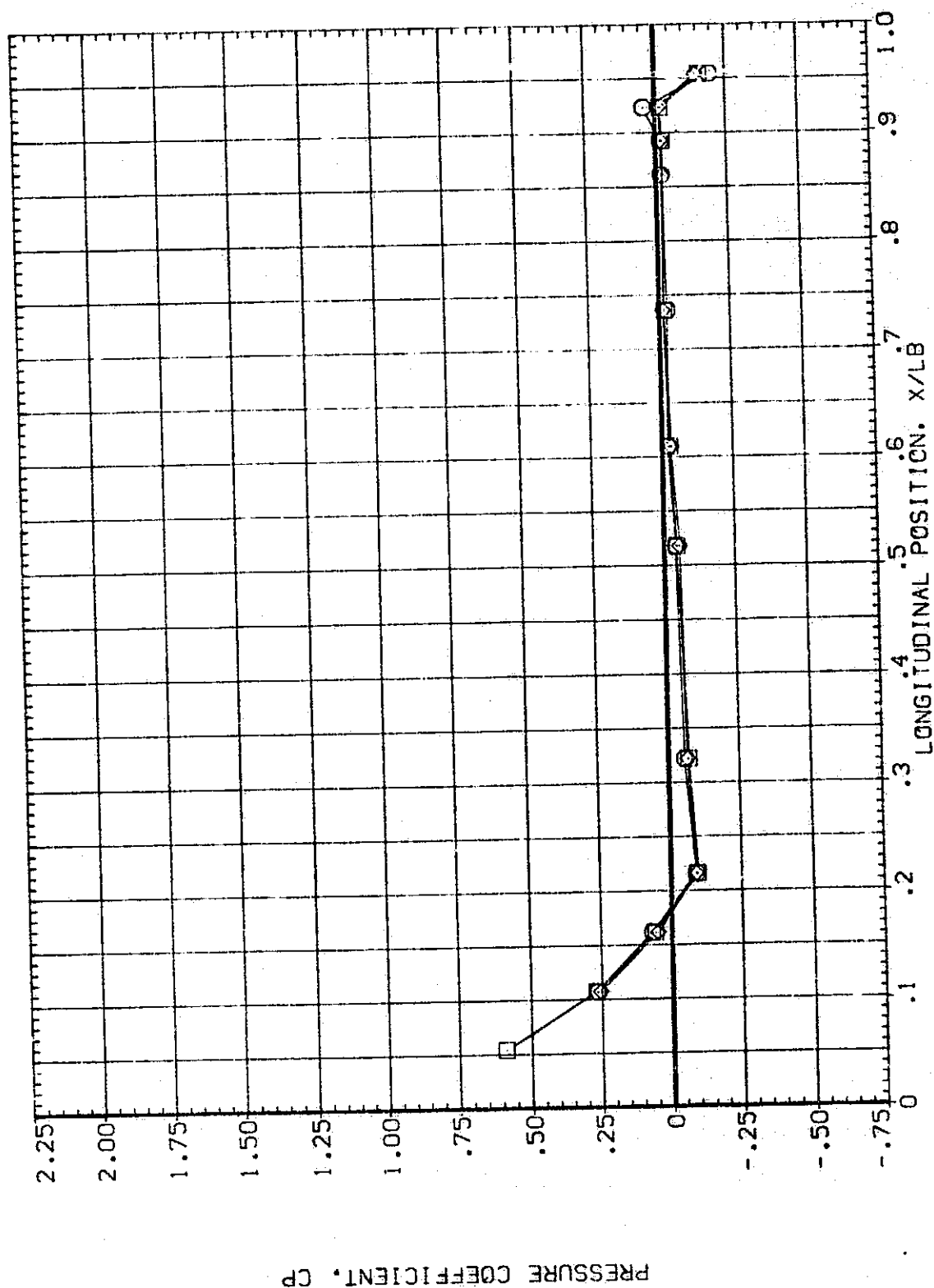


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A053)

SYMBOL	THETA		ALPHA	MACH	PARAMETRIC VALUES		
	190.000	232.500			BETA	OFFSET	.000
○			-.280	1.960	1.000	PH1	270.000
◇							

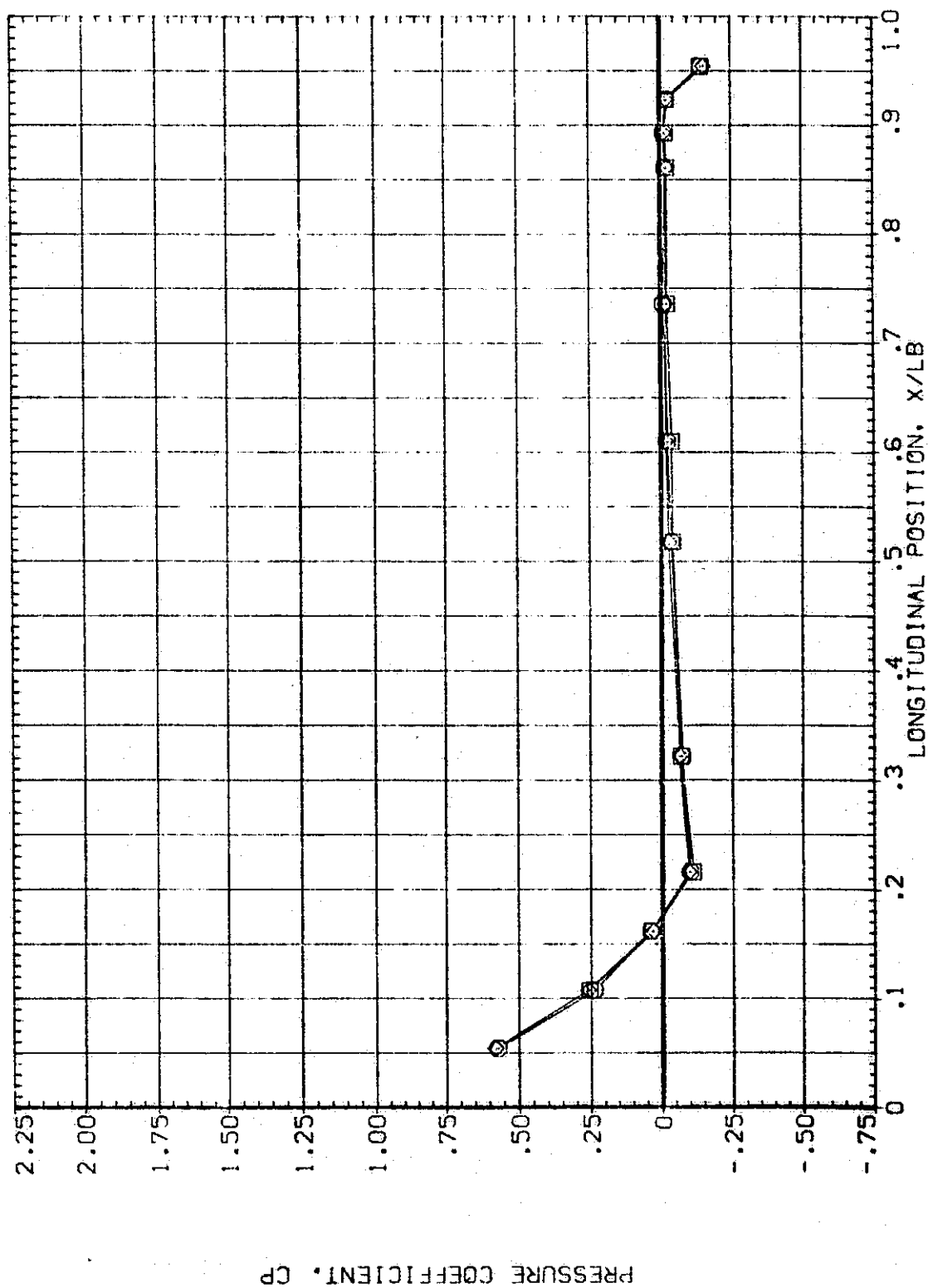


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA053)

SYMBOL    THETA    ALPHA    MACH  
 □    247.500    -.280    1.960  
 ○    270.000  
 ◇    292.500

PARAMETRIC VALUES  
 .000    .000    .000  
 BETA    OFFSET    PHI  
 MOUNT    1.000    270.000

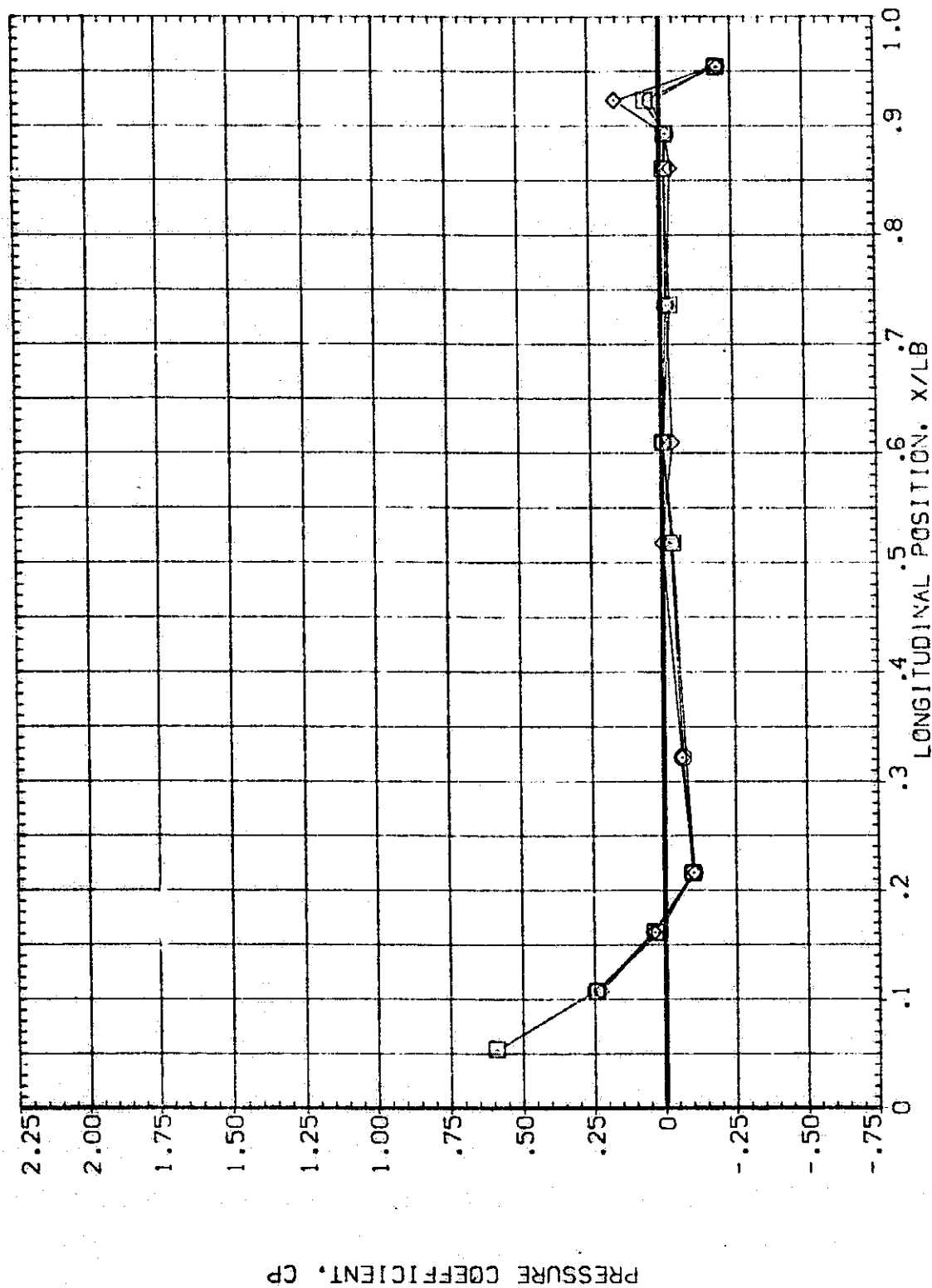


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	-.280	1.960	MDUNT	.000 OFFSET .000
□	326.000				1.000 PHI 270.000
◇	346.000				

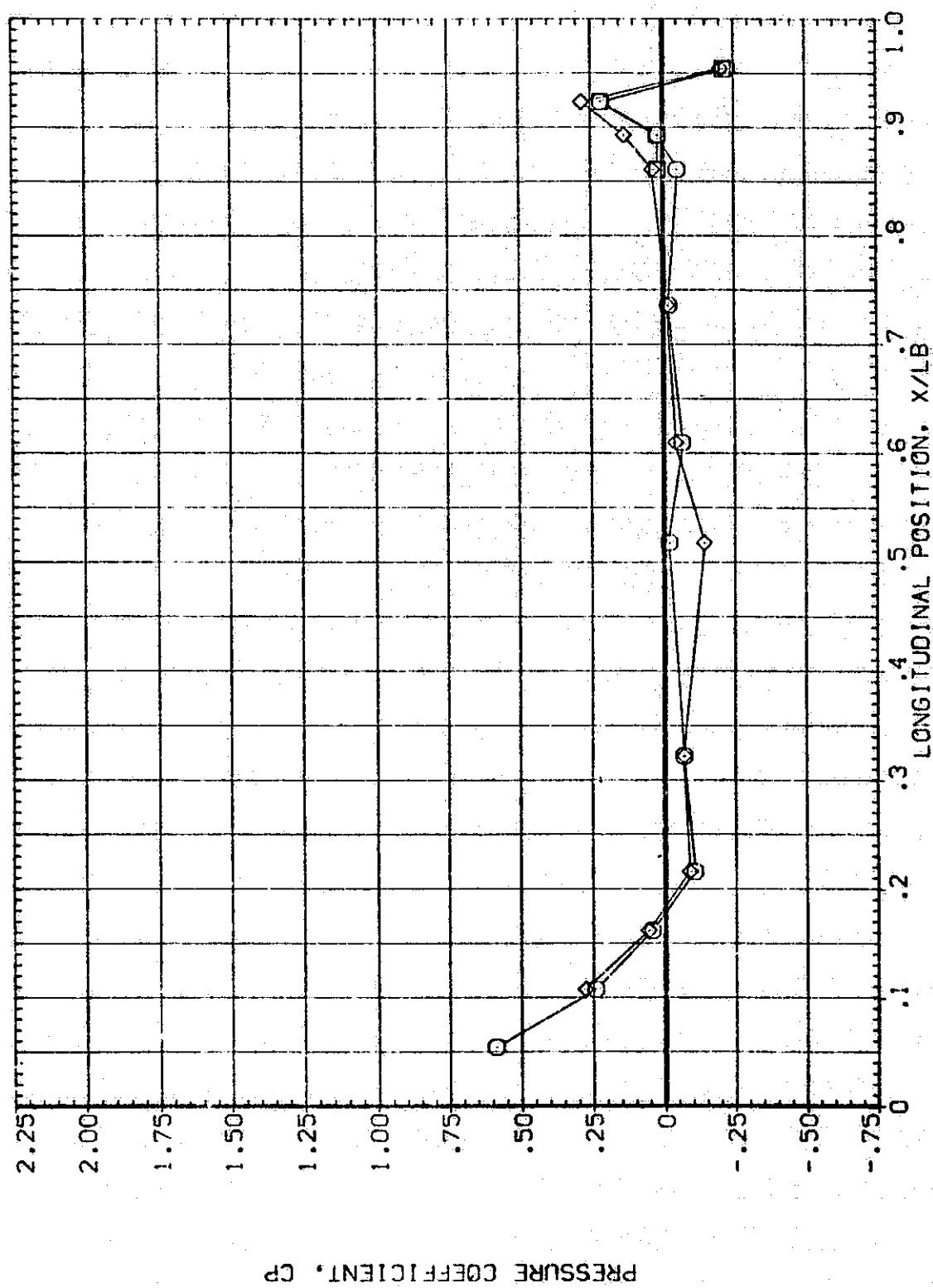


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A054)

SYMBOL  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 3.770

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 PHI

.000  
 270.000

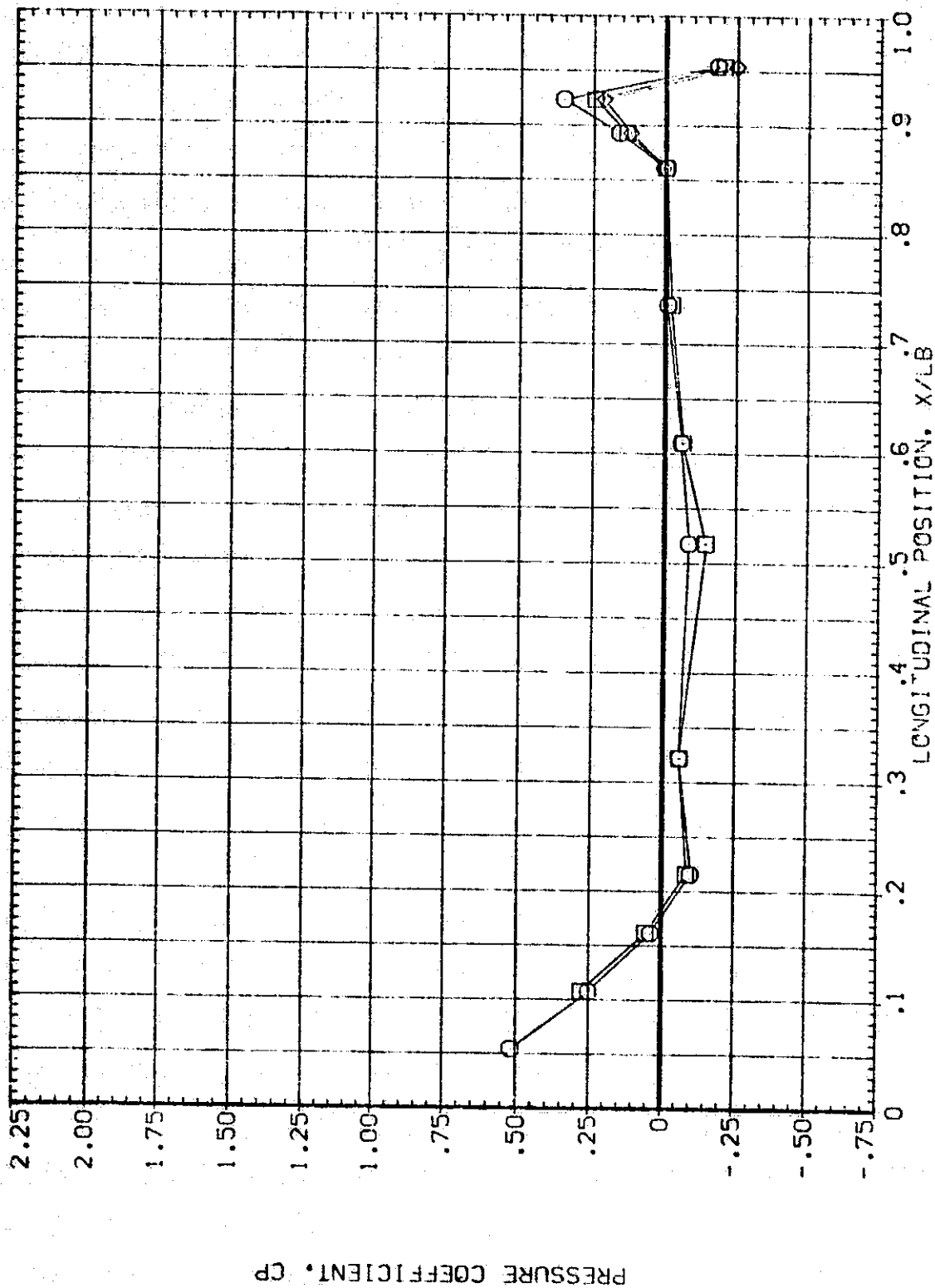


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 536 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A054)

SYMBOL  
 ○ □ ◇

THETA  
 45.000  
 37.500  
 30.000

ALPHA  
 3.770

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 OFFSET  
 PHI

.000  
 270.000

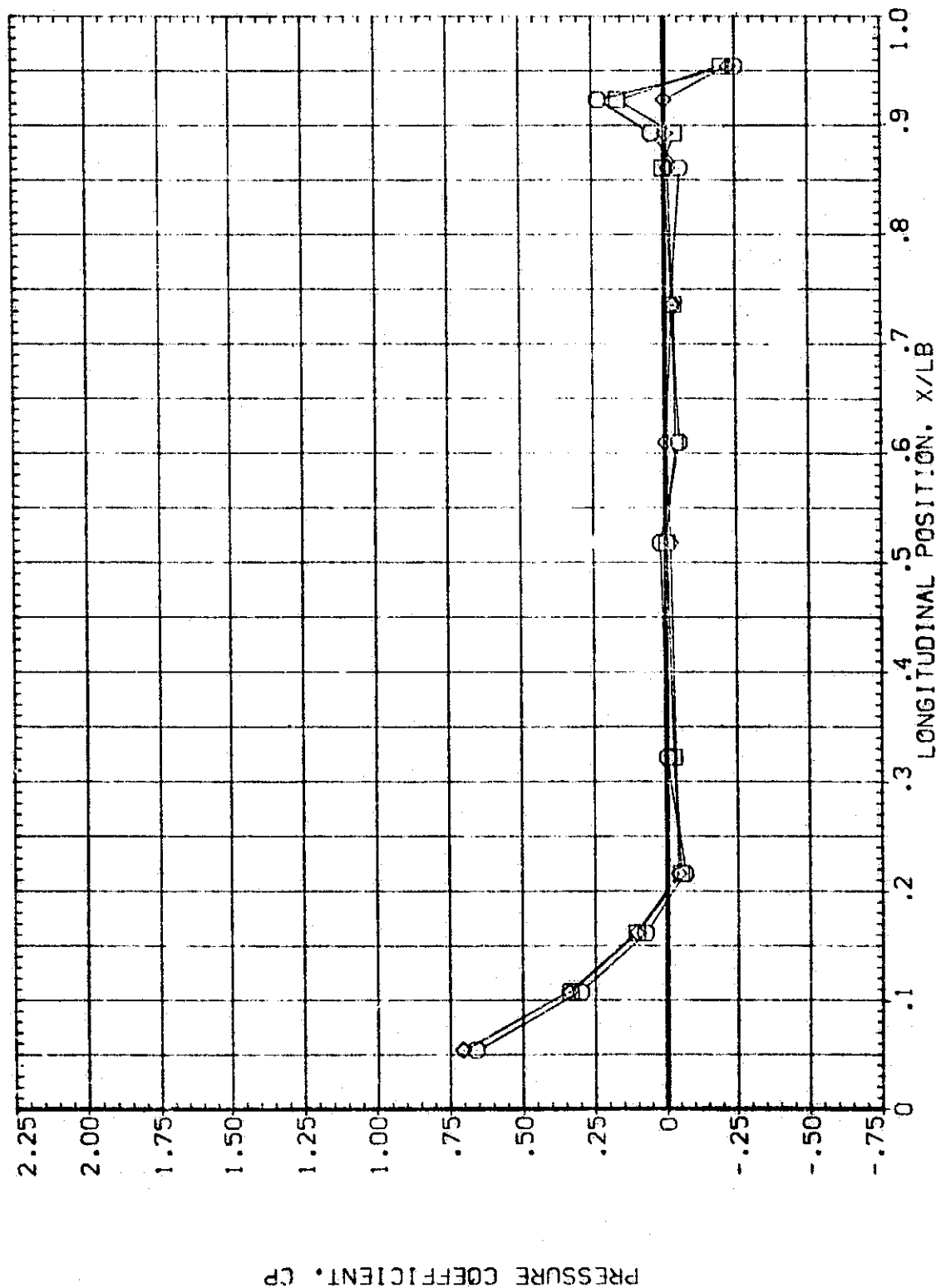


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA054)

SYMBOL  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 3.770

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 270.000  
 .000  
 .000  
 .000

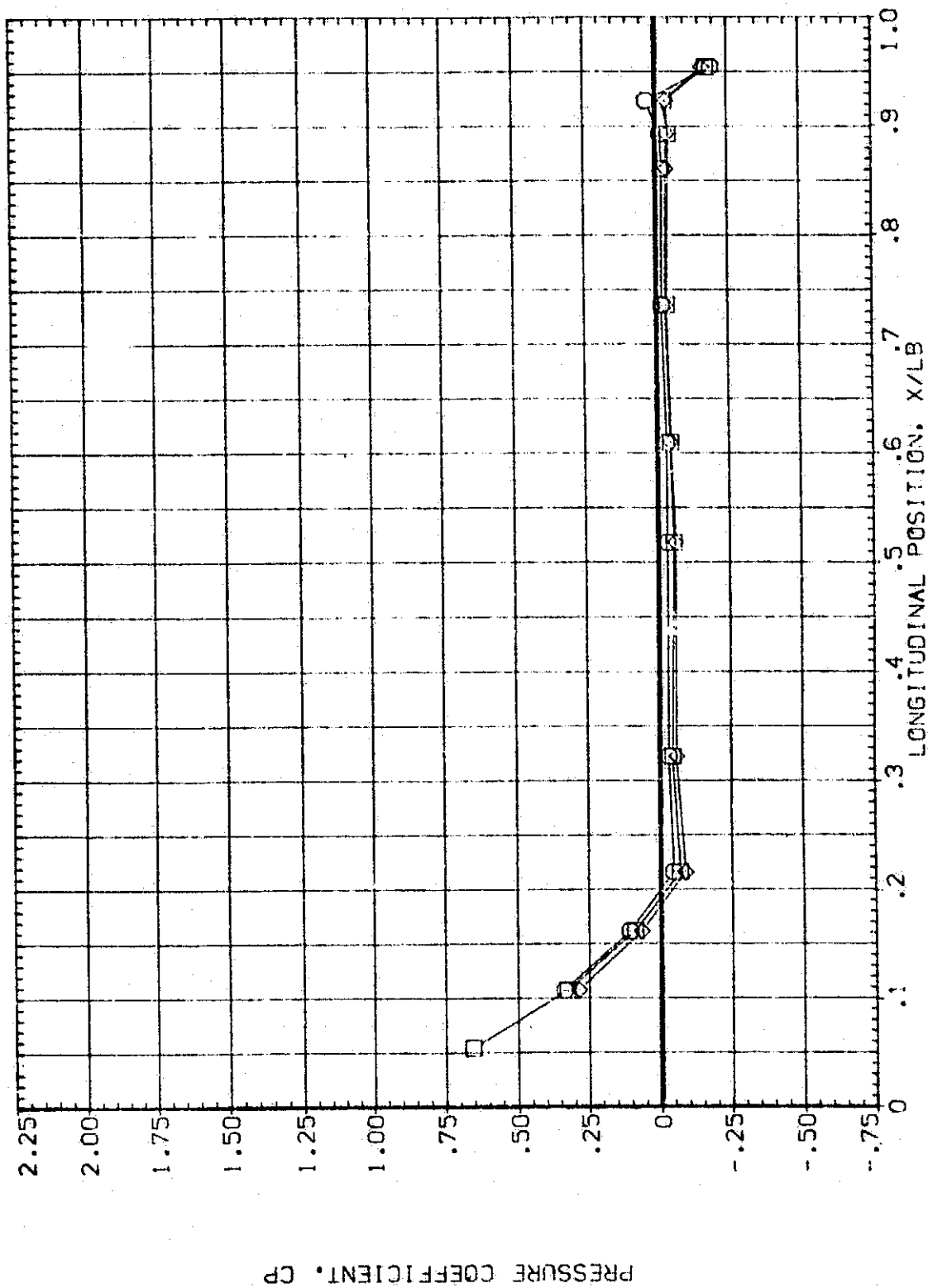


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A054)

SYMBOL	THETA		ALPHA	MACH	PARAMETRIC VALUES		
	190.000	202.500			BETA	OFFSET	PHI
○	190.000	202.500	3.770	1.960	1.000	.000	270.000
□	202.500	225.000					
◇	225.000						

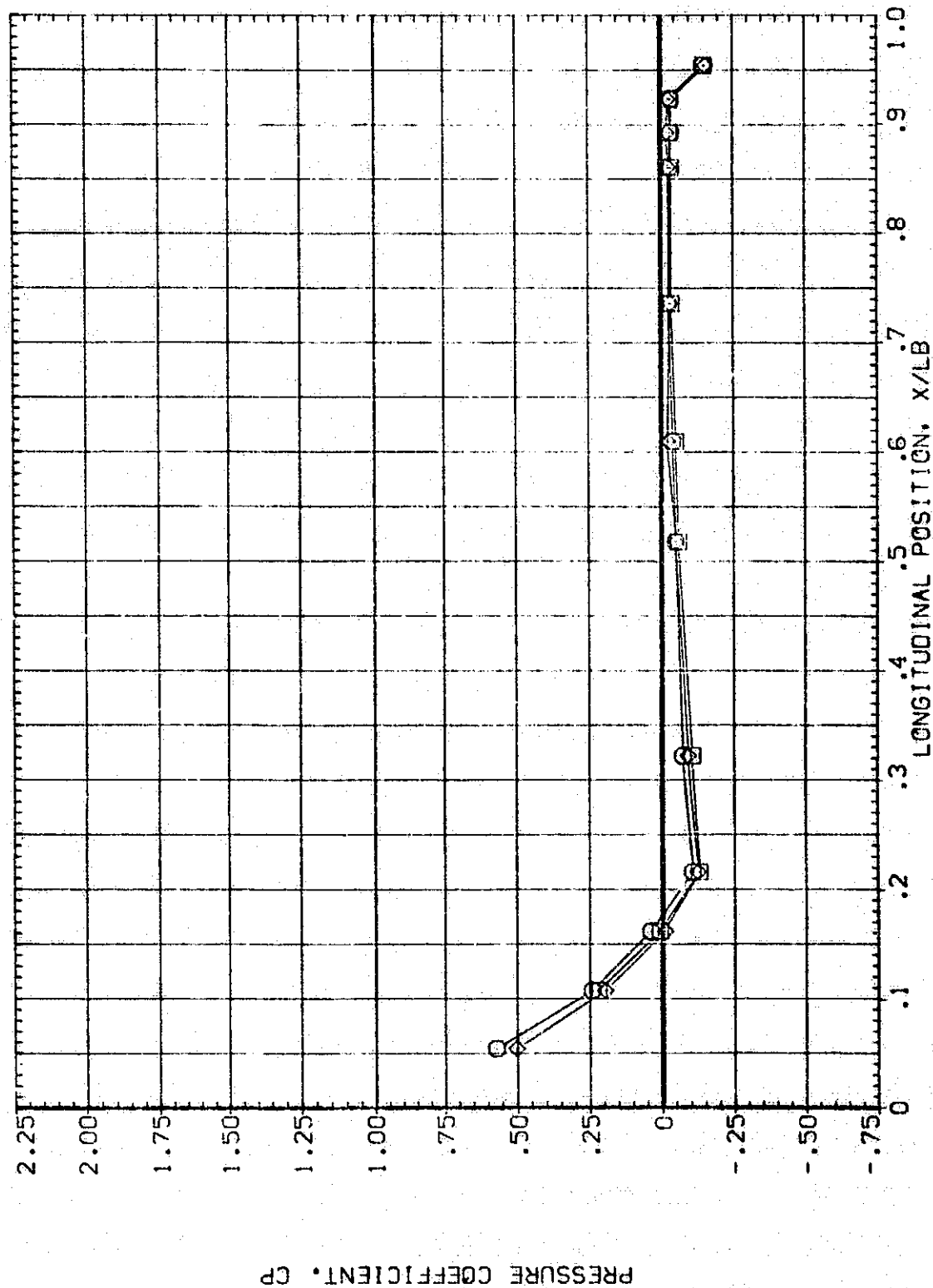


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A054)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	3.770	1.960	.000	.000	.000
□	270.000			1.000		270.000
◇	292.500					

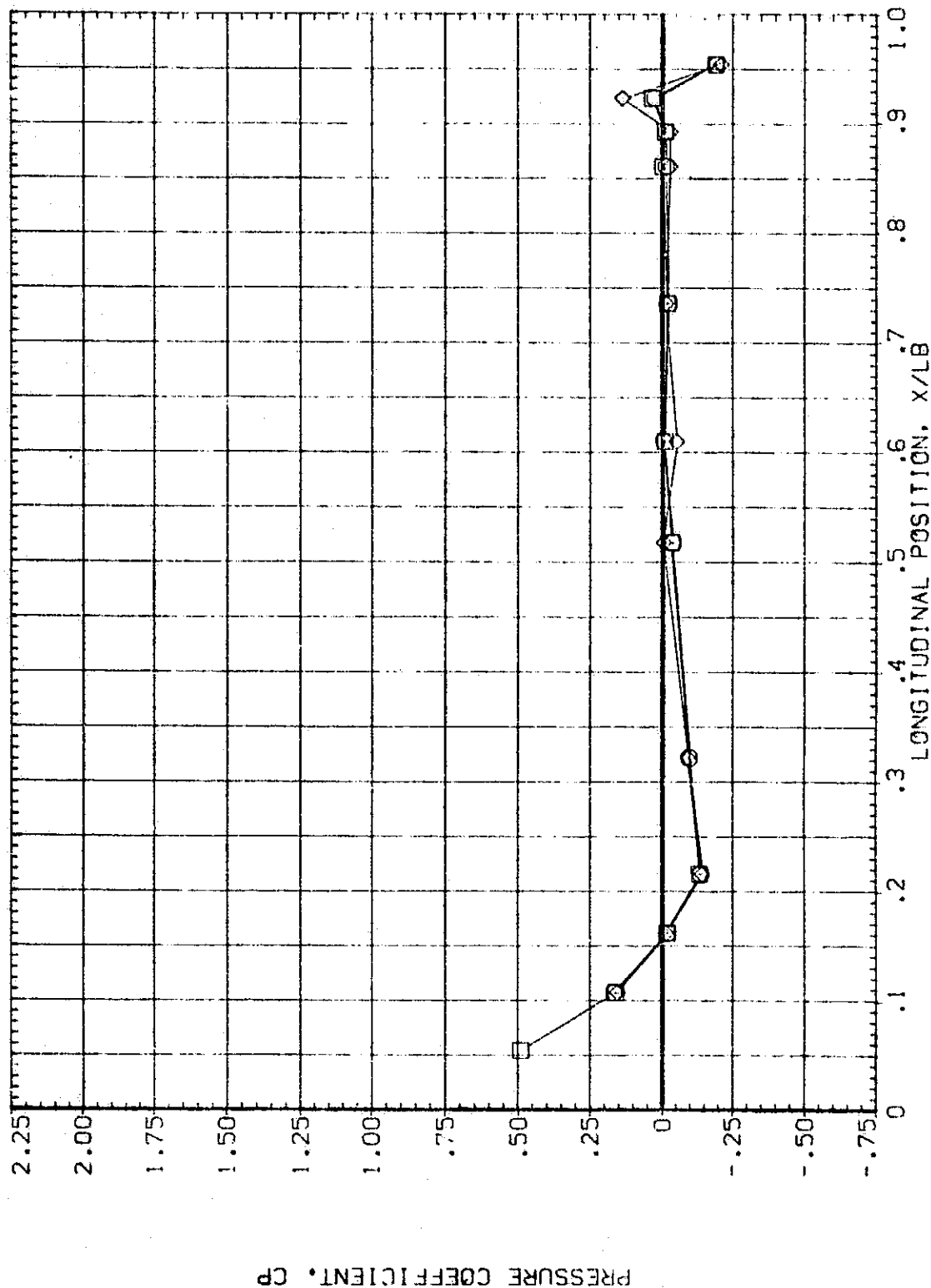


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 3.770

MACH  
 1.960

PARAMETRIC VALUES

BETA  
 MOUNT  
 .000  
 1.000  
 270.000  
 OFFSET  
 PHI

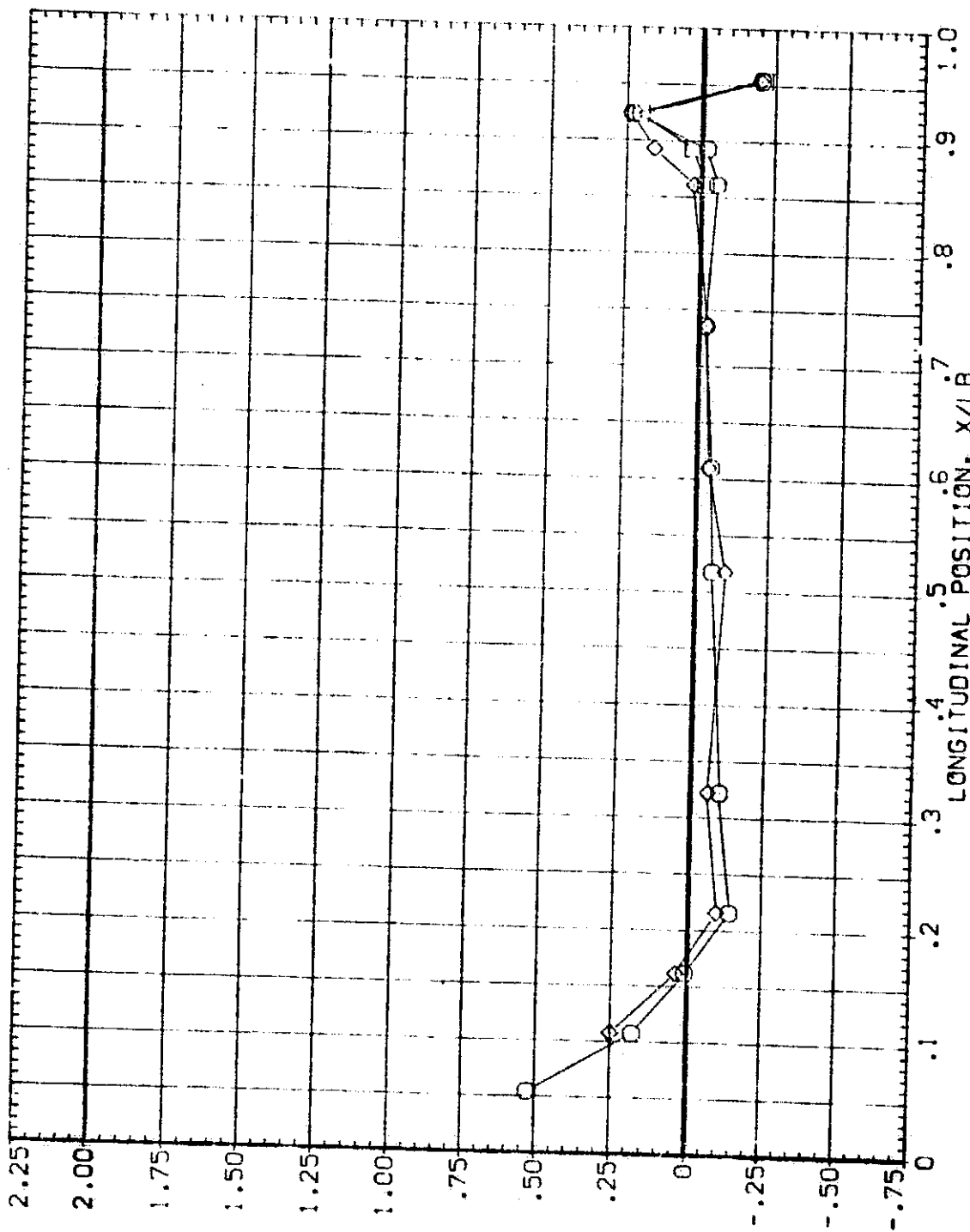


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA055)

SYMBOL THETA ALPHA MACH  
 □ .000 7.860 1.960  
 ◇ 14.000 24.000

BETA MOUNT  
 .000 1.000  
 OFFSET PHI 270.000

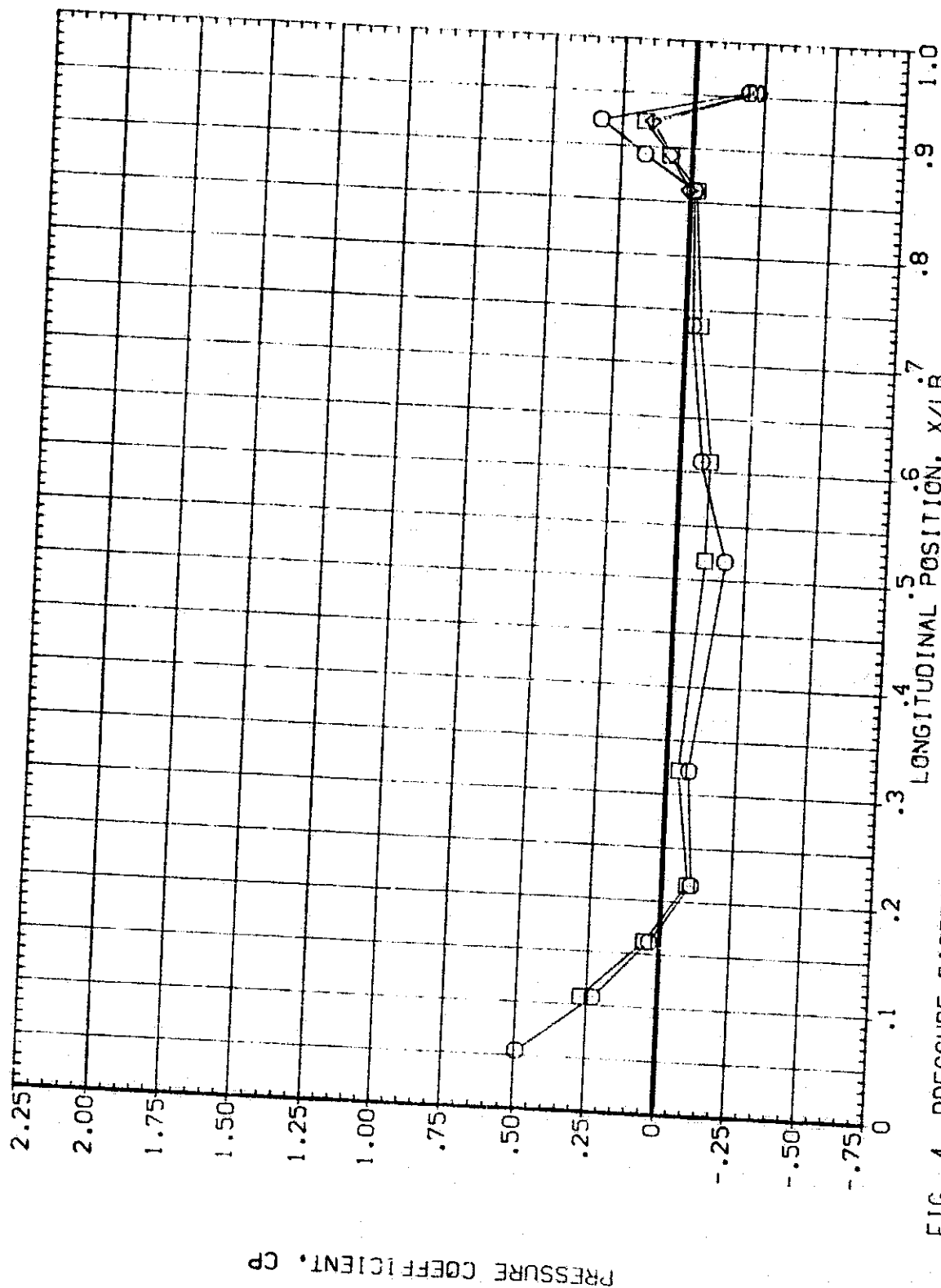


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
○  
□  
◇

THETA 45.000  
57.500  
90.000

ALPHA 7.860

MACH 1.960

PARAMETRIC VALUES  
BETA .000  
MOUNT 1.000  
PHI .000  
270.000

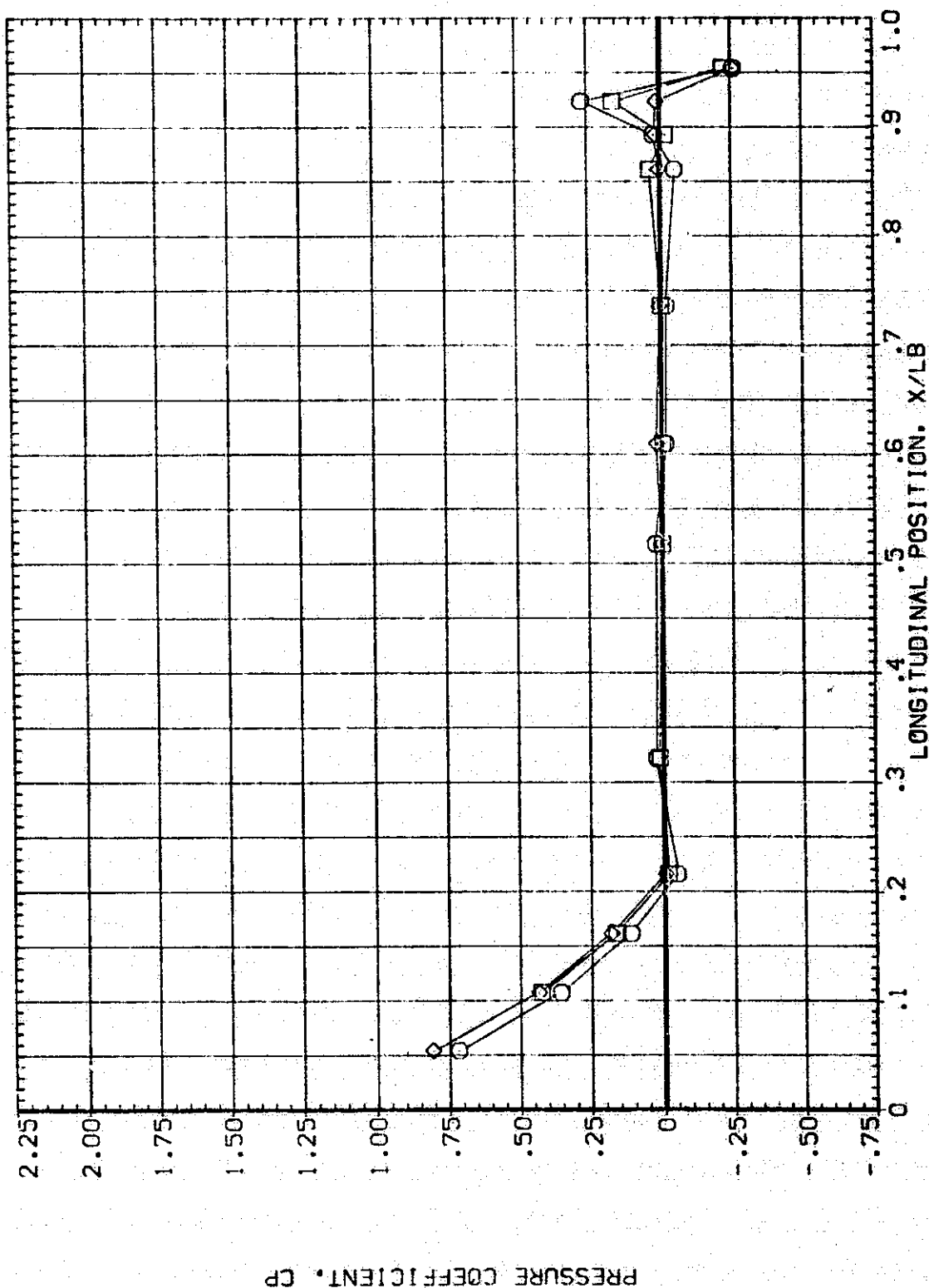


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR.

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA055)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	112.500	7.860	1.960	.000	.000	.000
◇	135.000			1.000		270.000
◇	157.500					

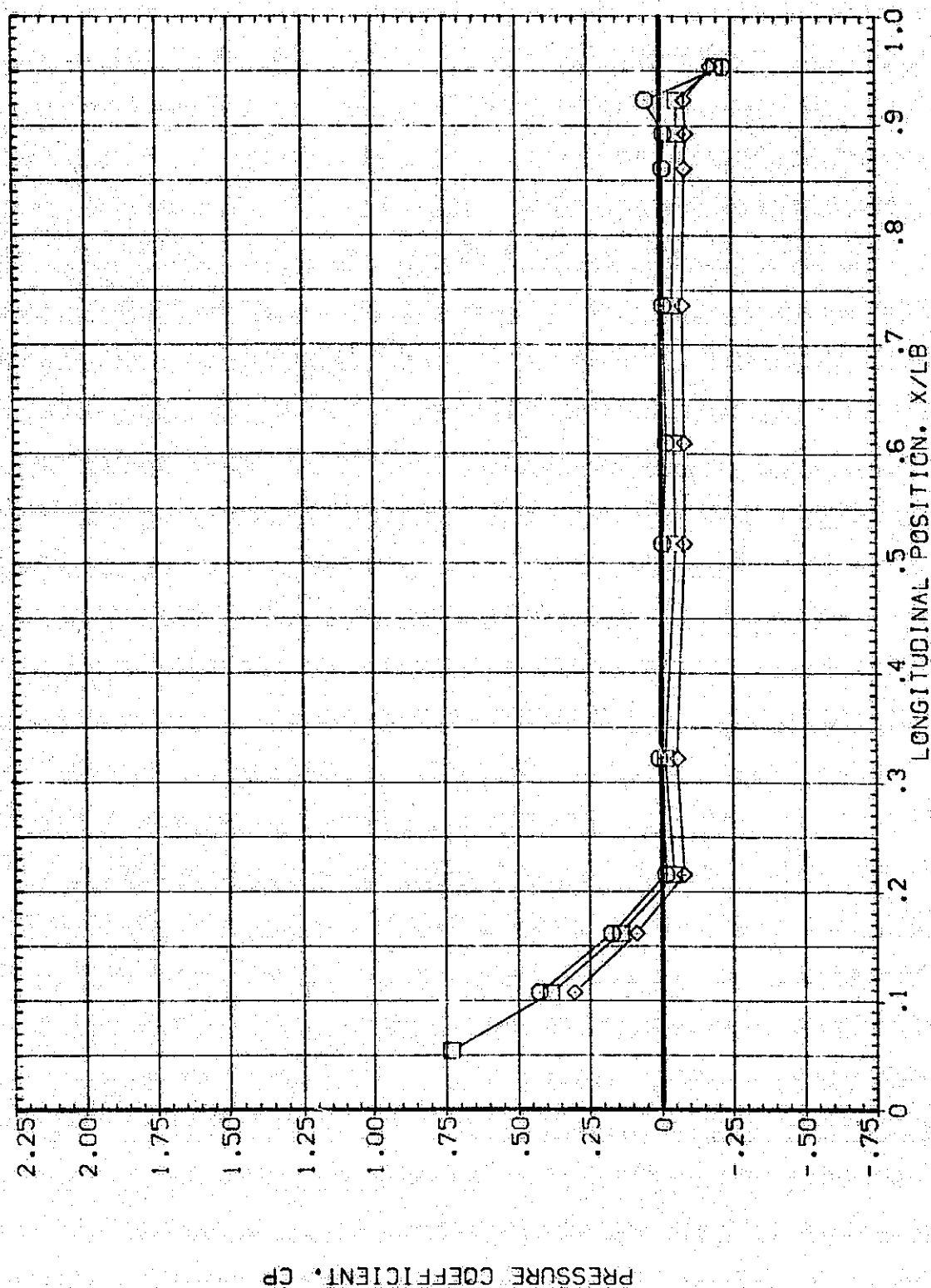


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 190.000 7.860 1.960  
 232.500  
 225.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PH1  
 270.000

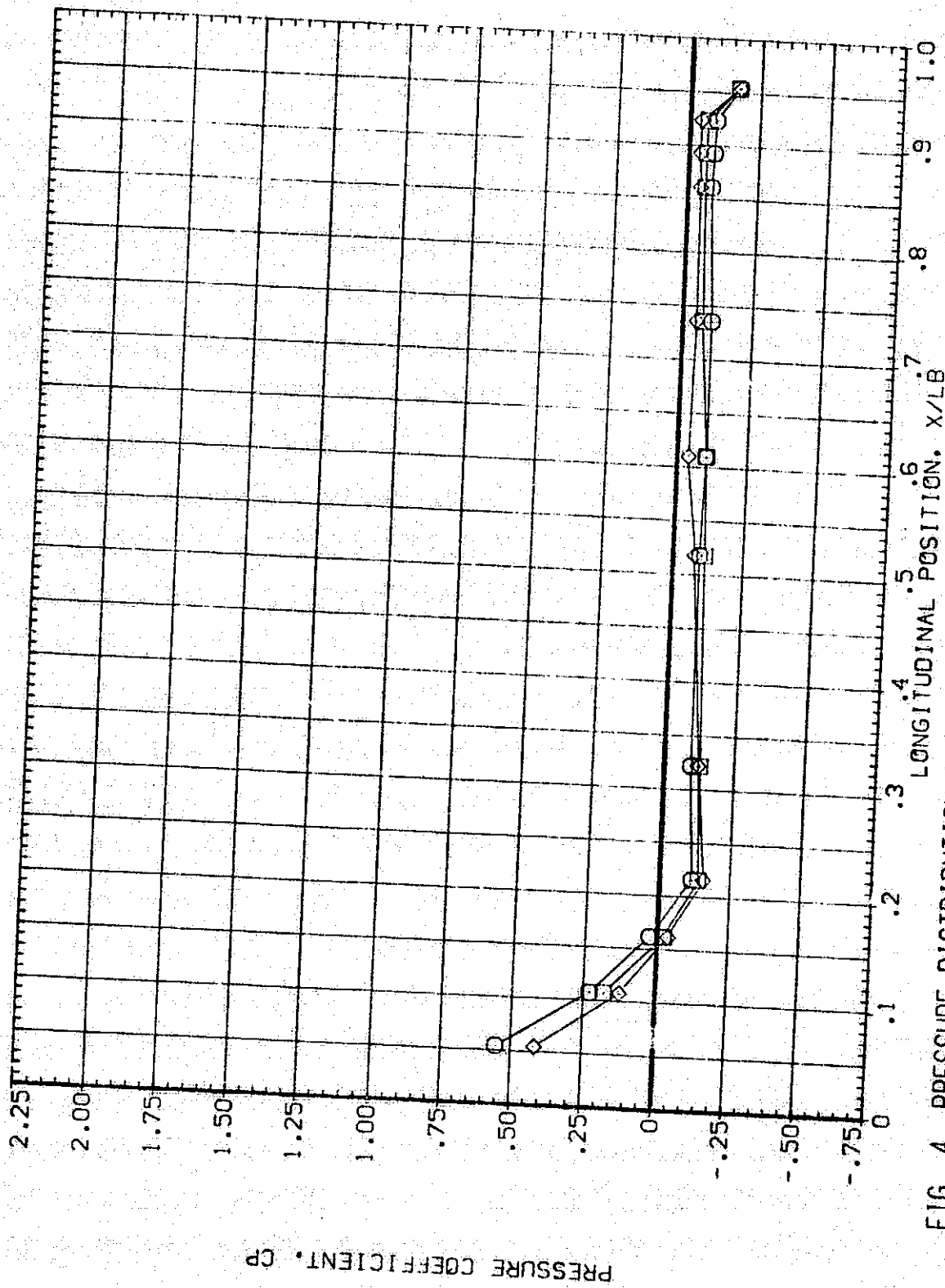


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A055)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BET'	OFFSET	
○	247.500	7.860	1.960	MOUNT	PHI	
□	270.000					.000
◇	292.500					270.000

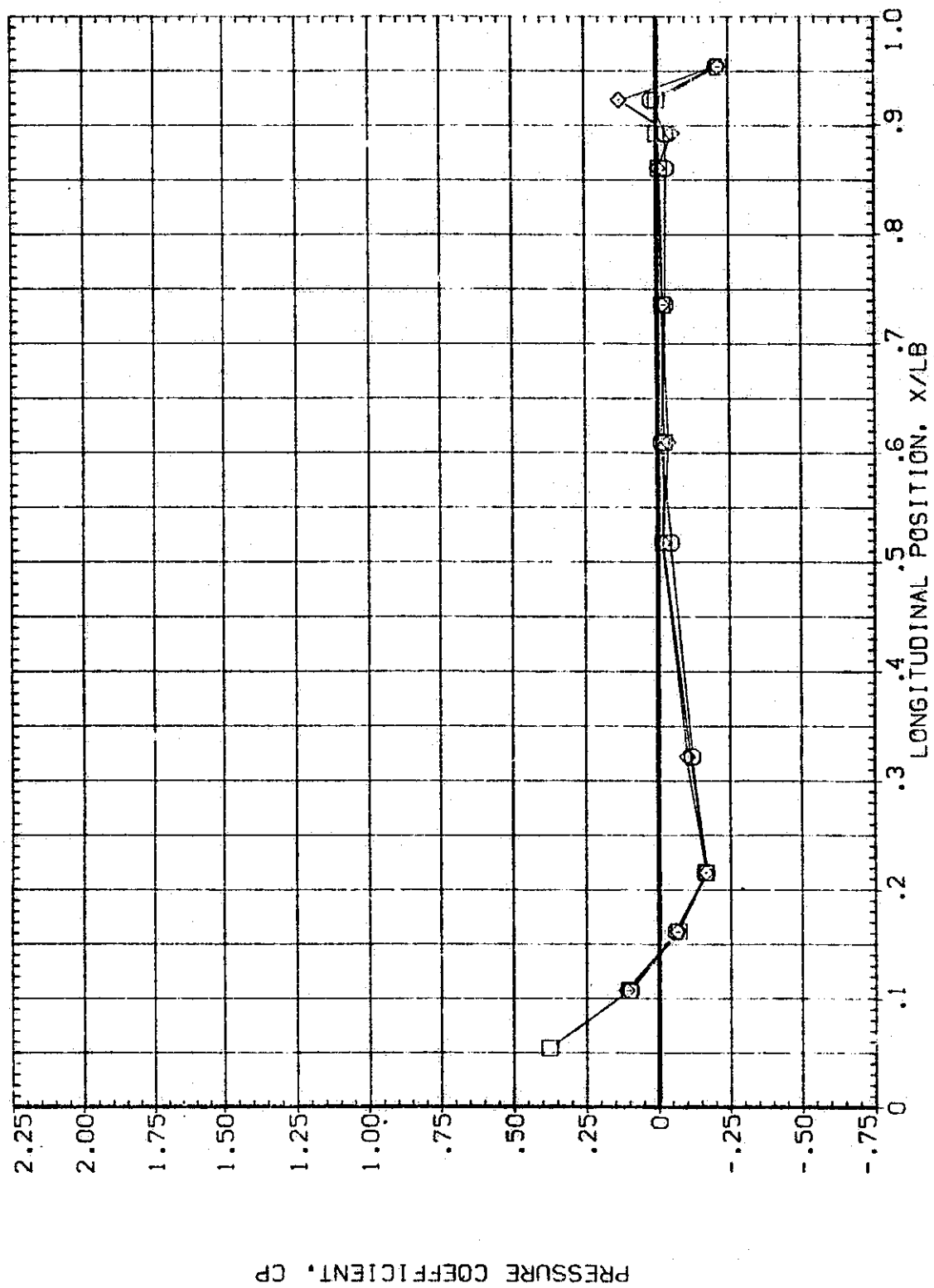


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 .000 .000 .000  
 BETA OFFSET PHI  
 MOUNT 1.000 270.000

ALPHA MACH  
 7.860 1.960

THETA  
 315.000  
 326.000  
 346.000

SYMBOL  
 ○ □ ◇

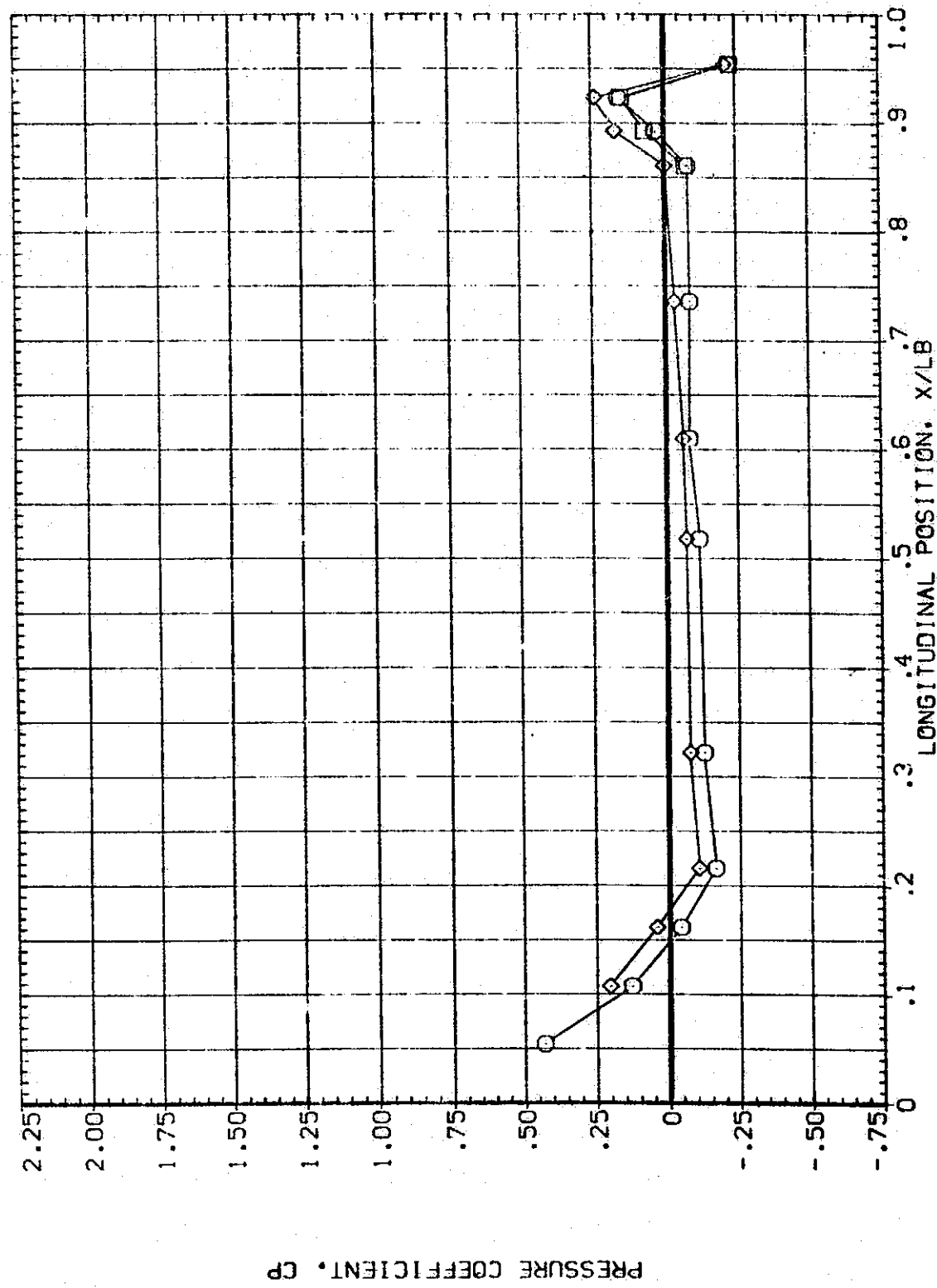


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA056)

SYMBOL

THETA  
-0.000  
14.000  
24.000

ALPHA  
12.570

MACH  
1.970

BETA  
MOUNT

PARAMETRIC VALUES  
-0.000 OFFSET  
1.000 PHI  
20.000  
270.000

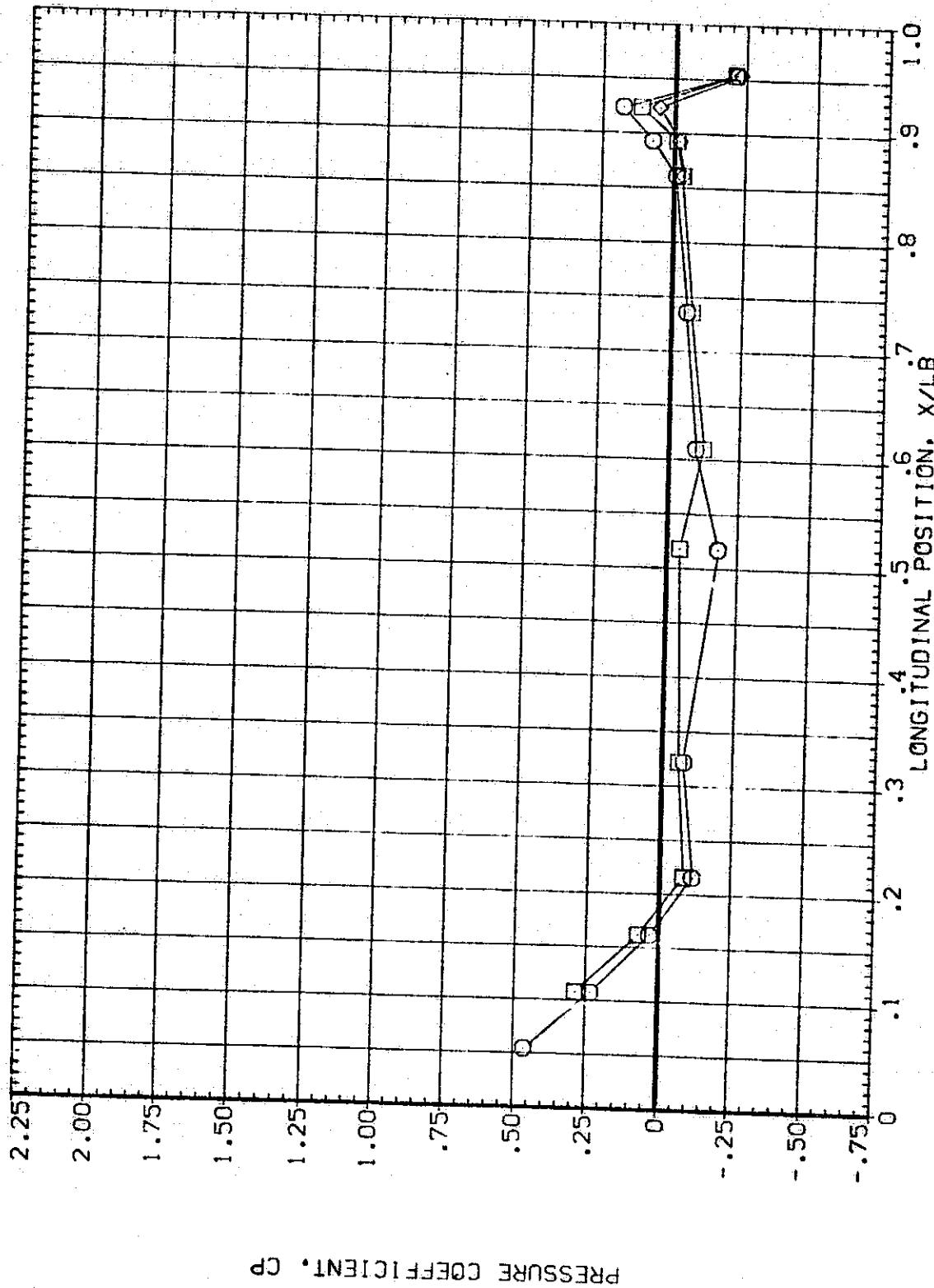


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A056)

SYMBOL  
 ○ □ ◇

THETA 45.000  
 37.500  
 90.000

ALPHA 12.570  
 MACH 1.970

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET 20.000  
 PHI 270.000

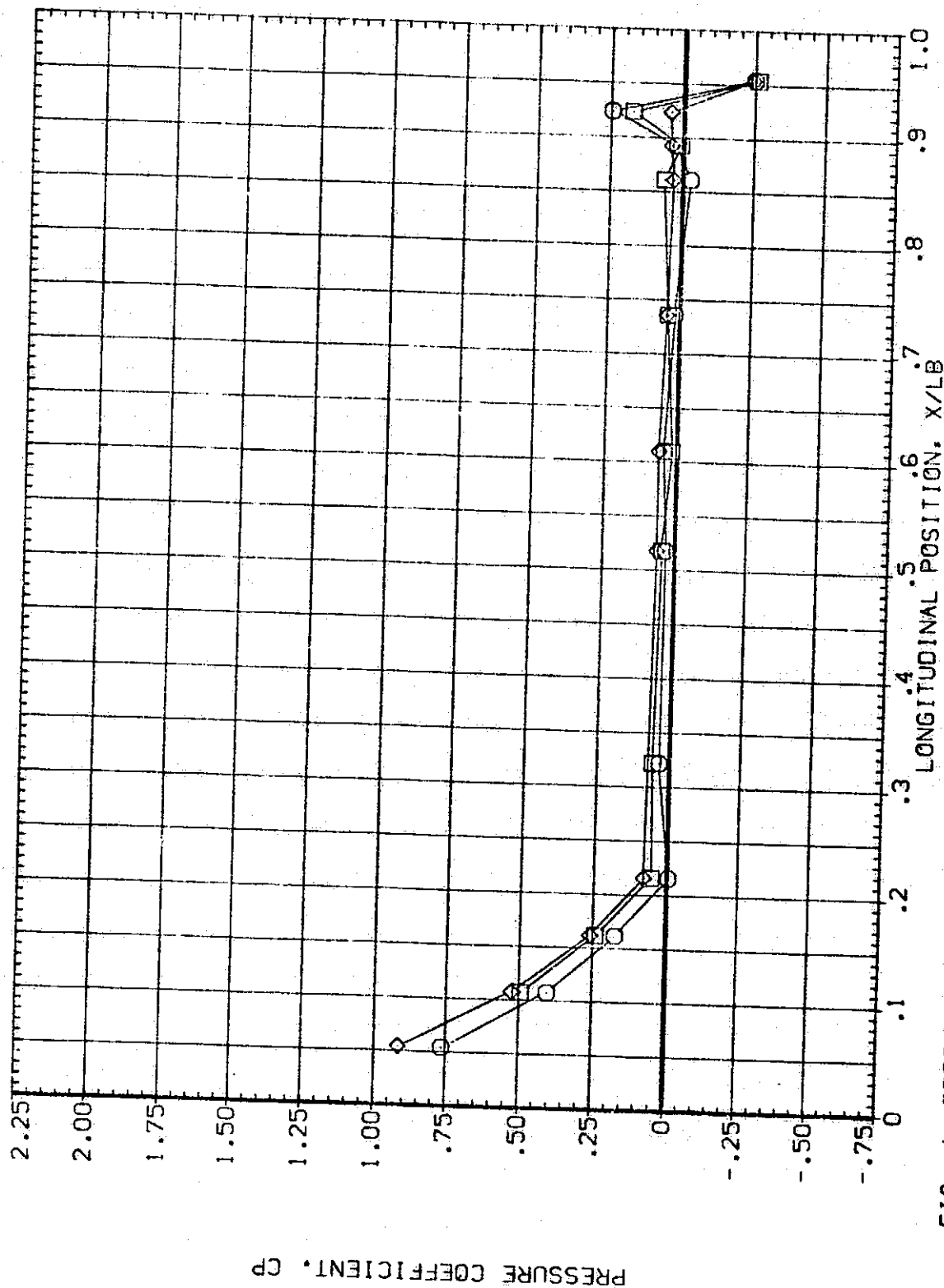


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A056)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 12.570

MACH  
 1.970

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PH:

20.000  
 270.000

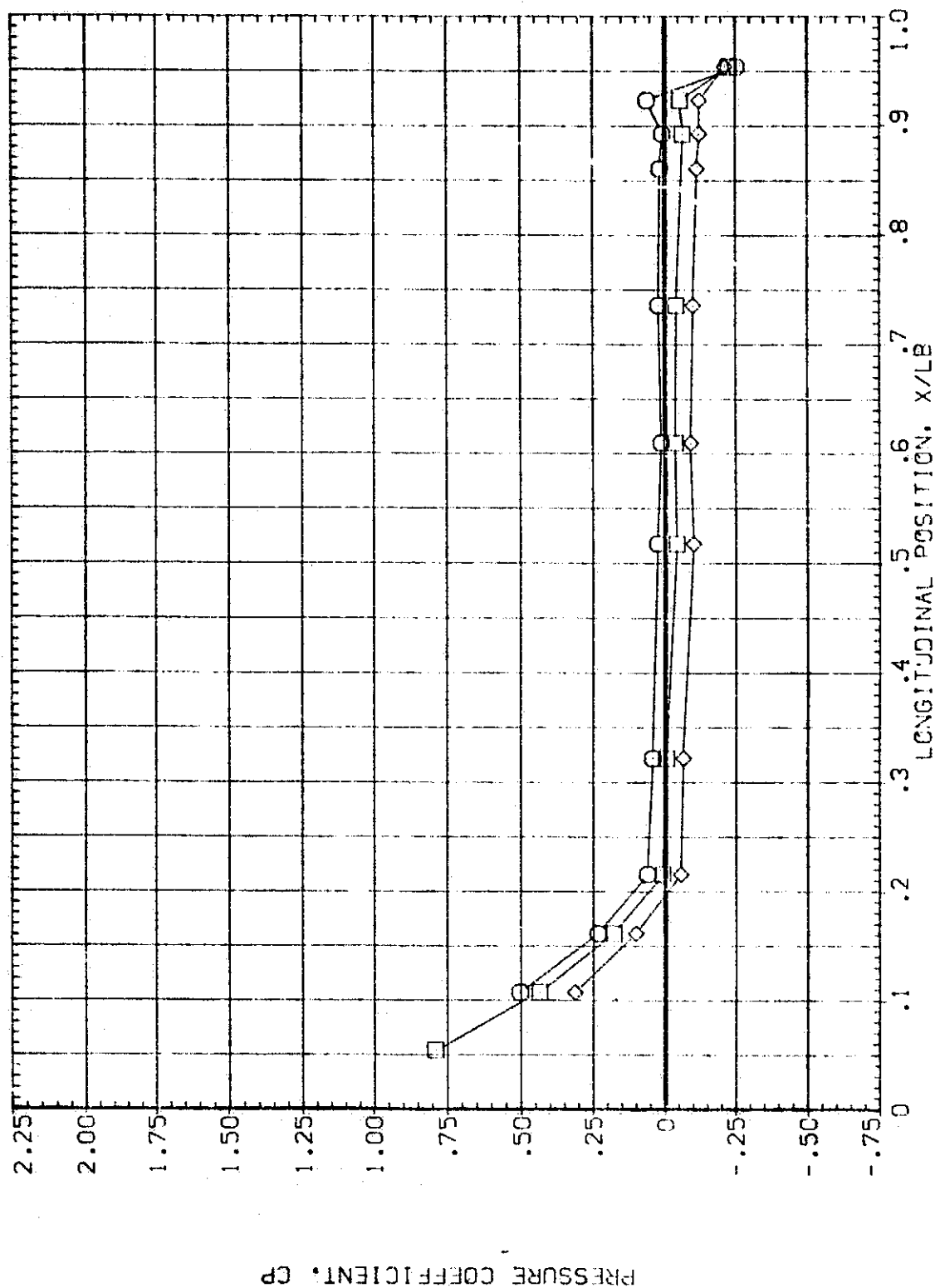


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 190.000  
 202.500  
 225.000

ALPHA  
 12.570

MACH  
 1.970

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PH1  
 20.000  
 270.000

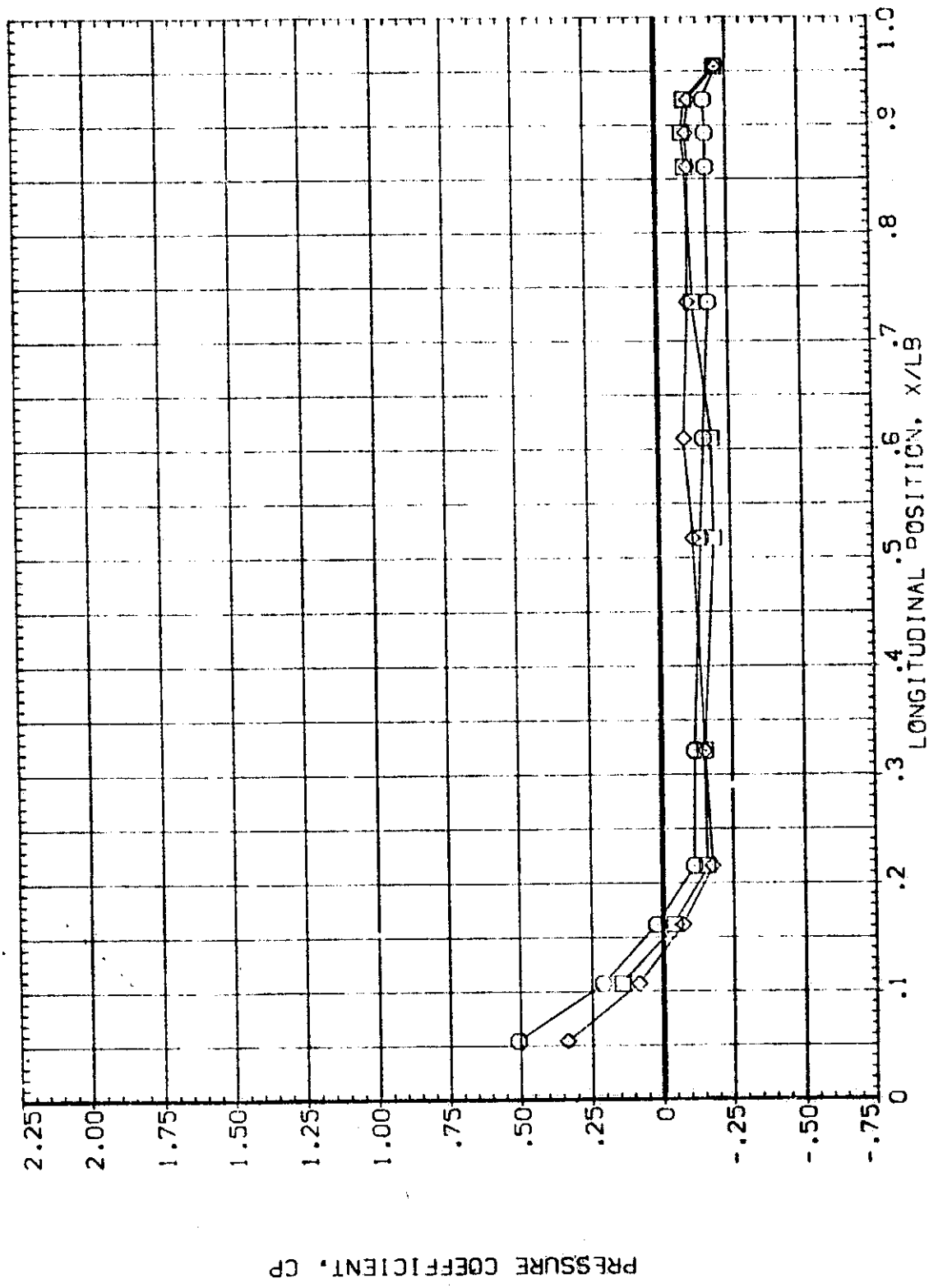


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA056)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	247.500	270.000	292.500	12.570	1.970		BETA	.000	OFFSET	20.000
□							WOUNT	1.000	PHI	270.000

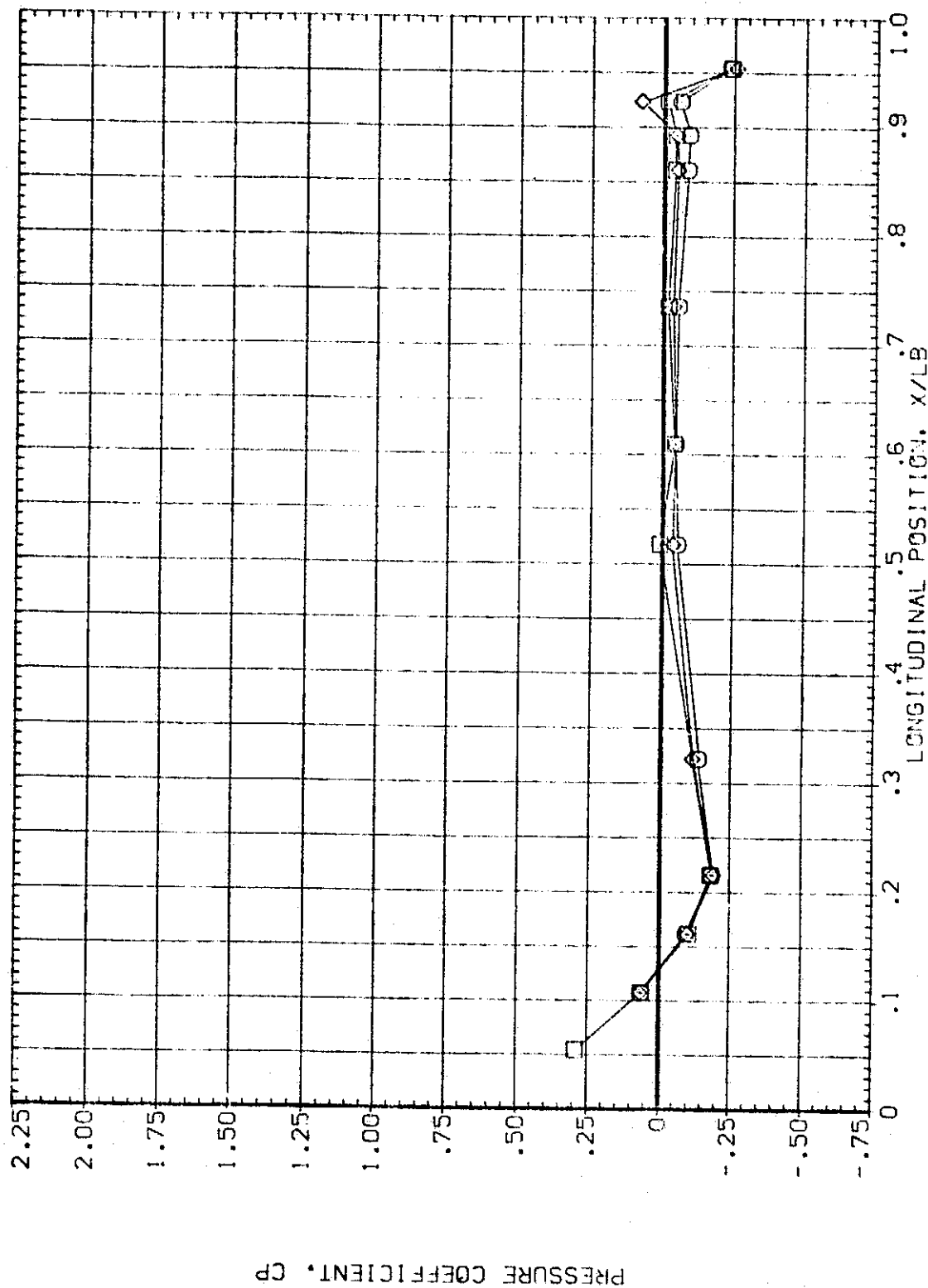


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA056)

SYMBOL  
 315.000  
 326.000  
 346.000

THETA  
 12.570  
 1.970

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 20.000  
 270.000

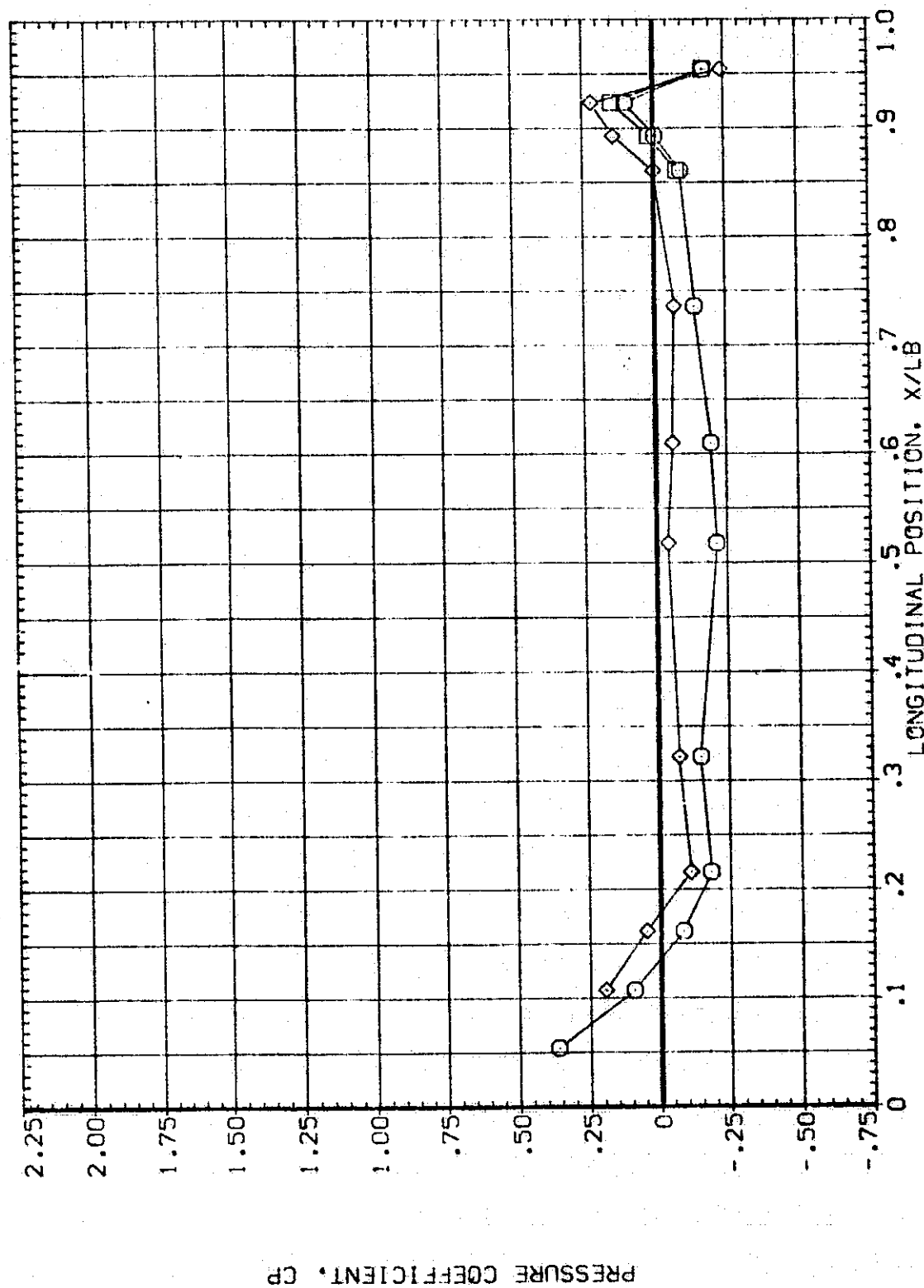


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A057)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 16.640

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI  
 20.000  
 270.000

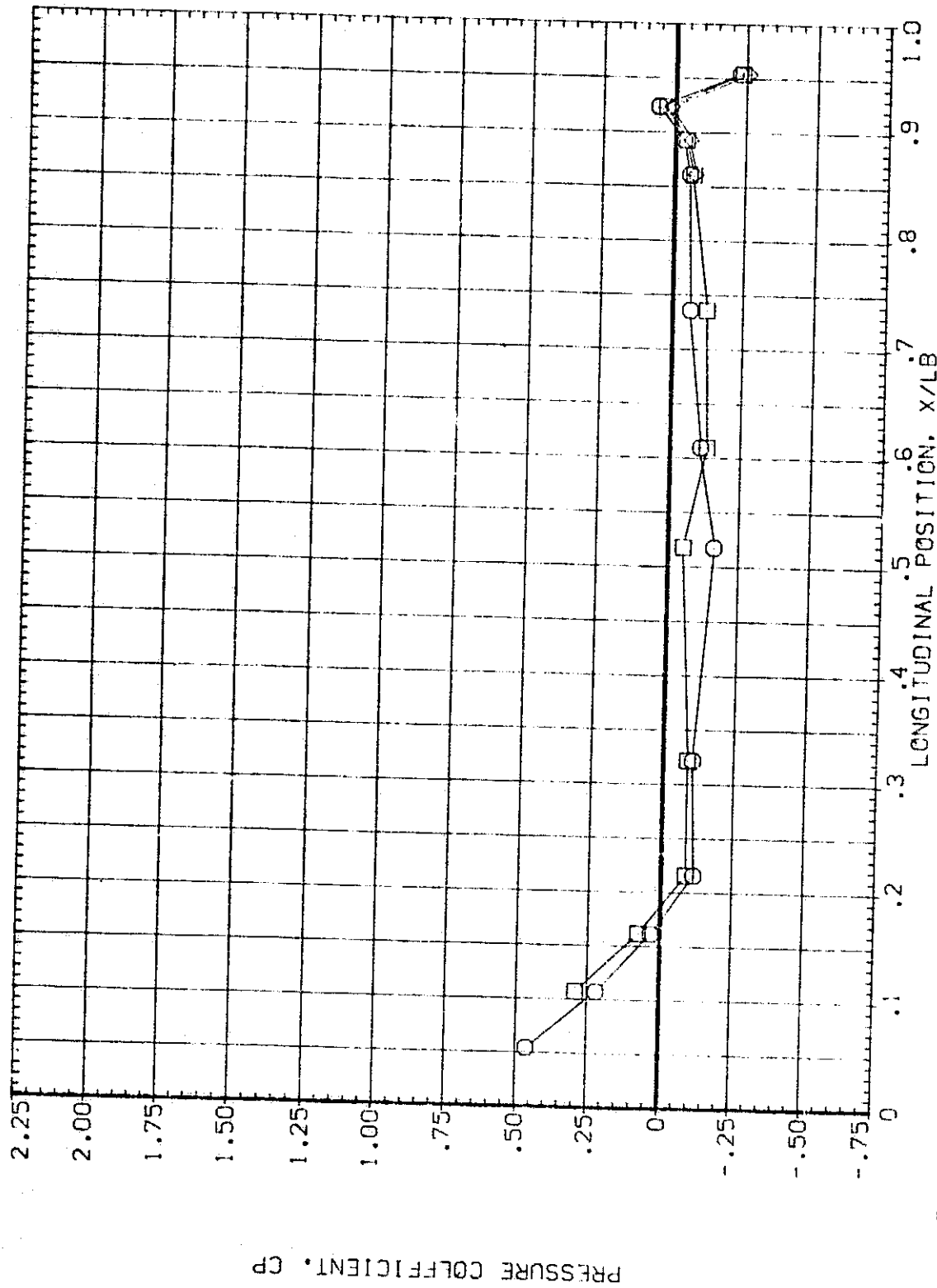


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA		ALPHA		MACH		BETA		PARAMETRIC VALUES	
	45.000	57.500	16.640	1.960	1.960	1.960	1.000	0.000	OFFSET	20.000
○	90.000						MOUNT	PHI	270.000	

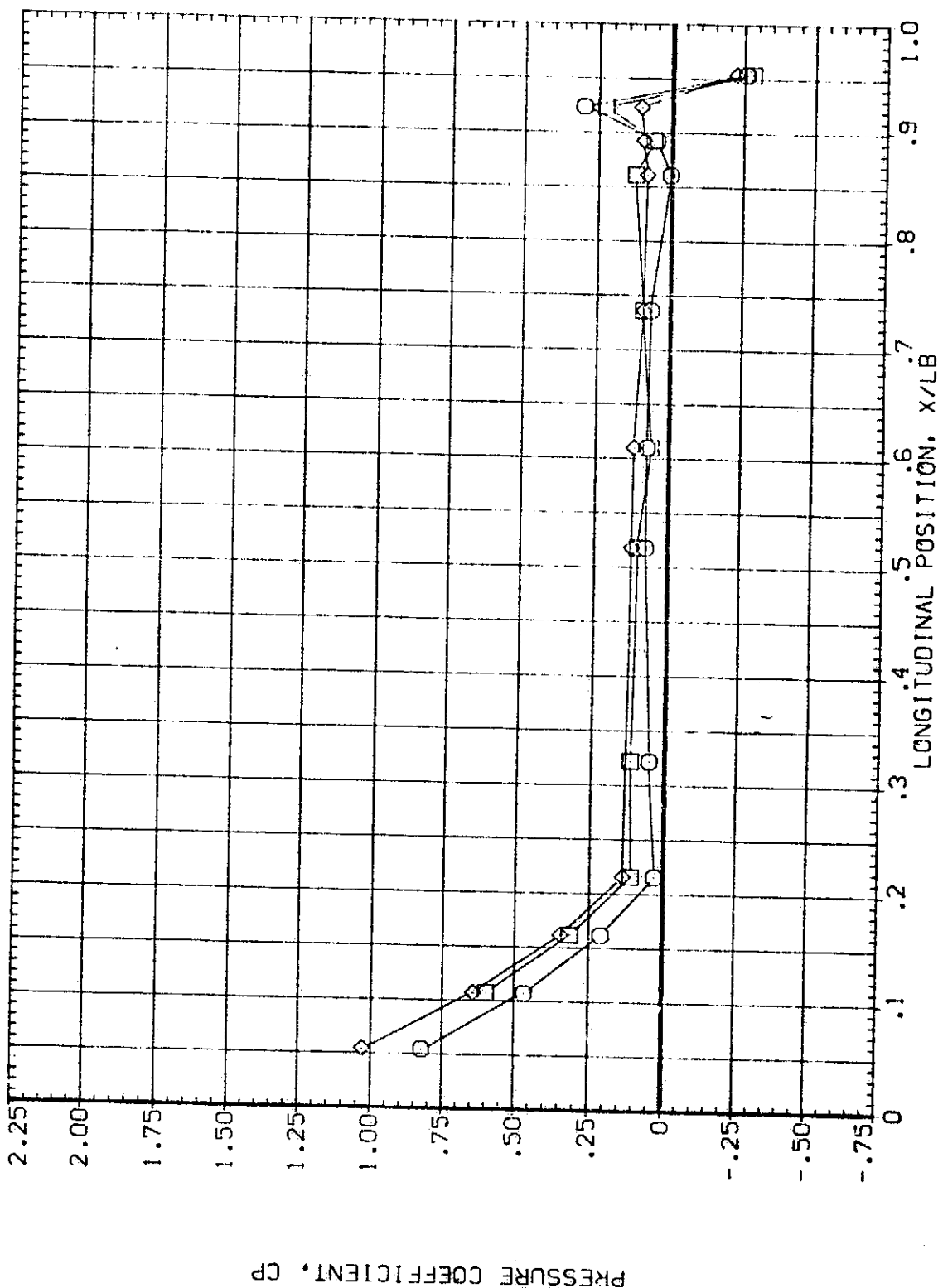


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA057)

SYMBOL

○ □ ◇

THETA

112.500  
135.000  
157.500

ALPHA

16.640

MACH

1.960

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

20.000  
270.000

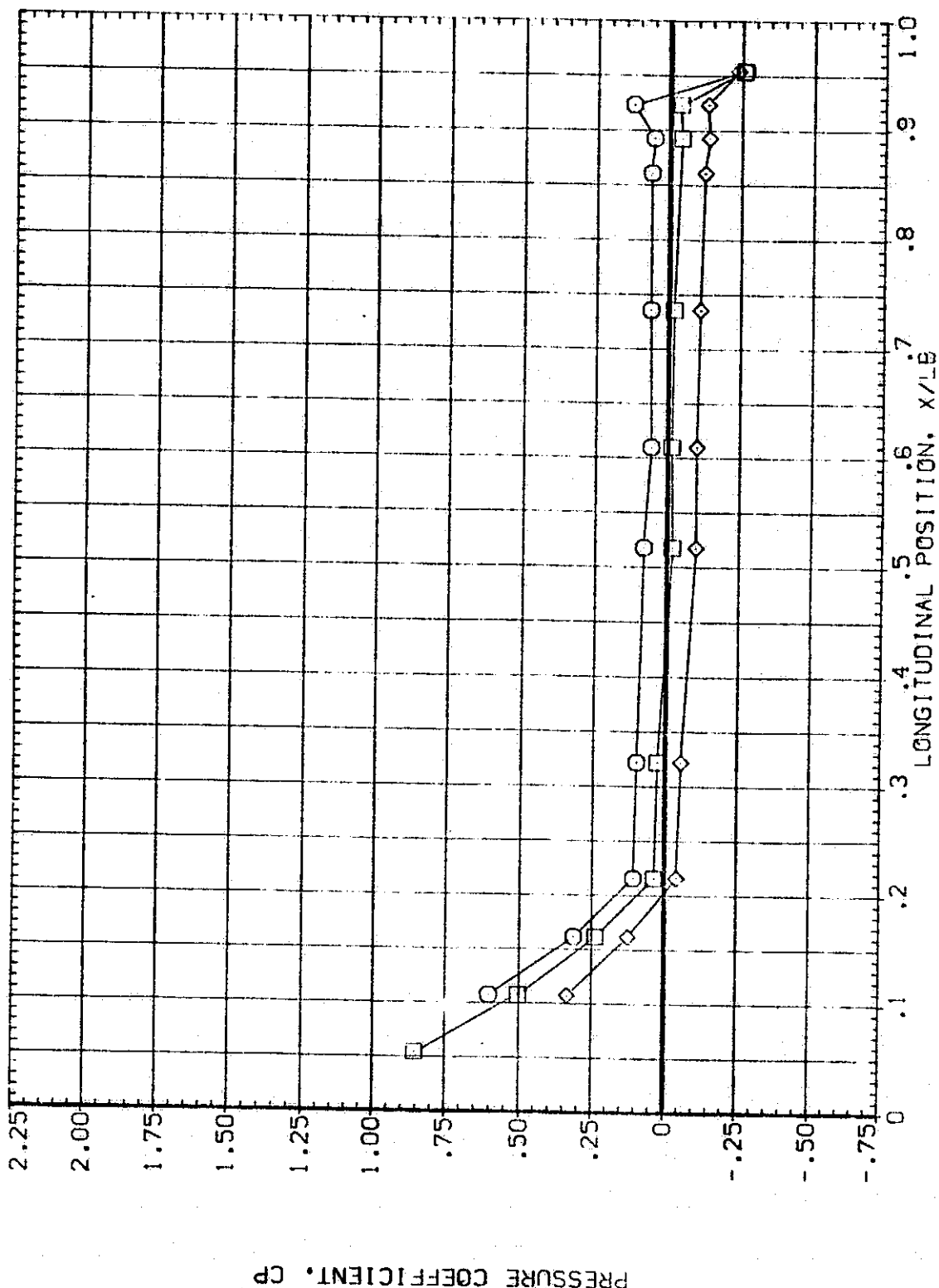


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 □  
 ◇

THETA  
 180.000  
 232.500  
 225.000

ALPHA  
 16.640

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 270.000

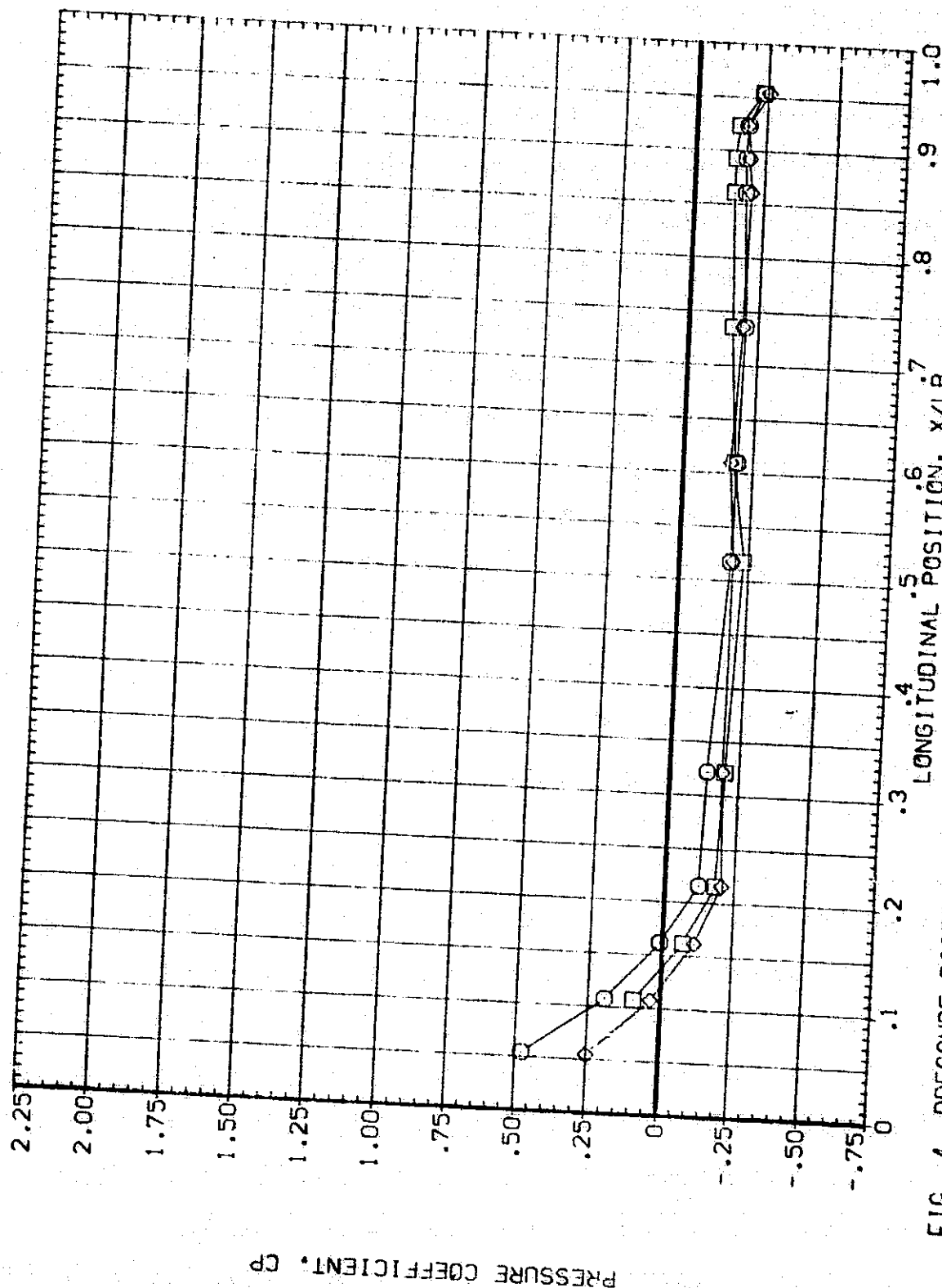


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSF: 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A057)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20.000
○	247.500	16.640	1.960	MOUNT	1.000	PHI
□	270.000					270.000
◇	292.500					

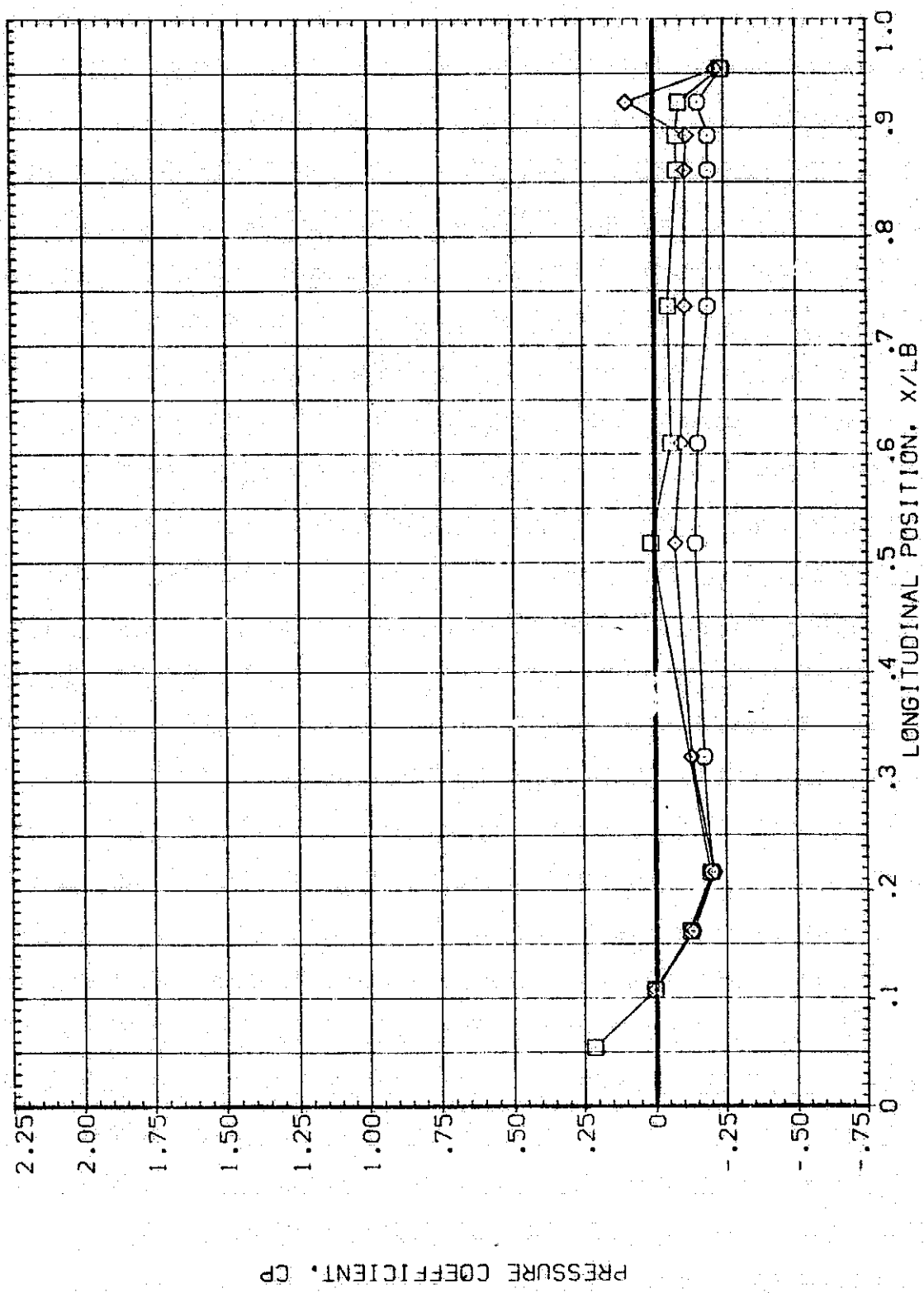


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL    THETA    ALPHA    MACH  
 ○    315.000    16.640    1.960  
 □    326.000  
 ◇    346.000

PARAMETRIC VALUES  
 BETA    .000    20.000  
 MOUNT    1.000    270.000  
 PHI

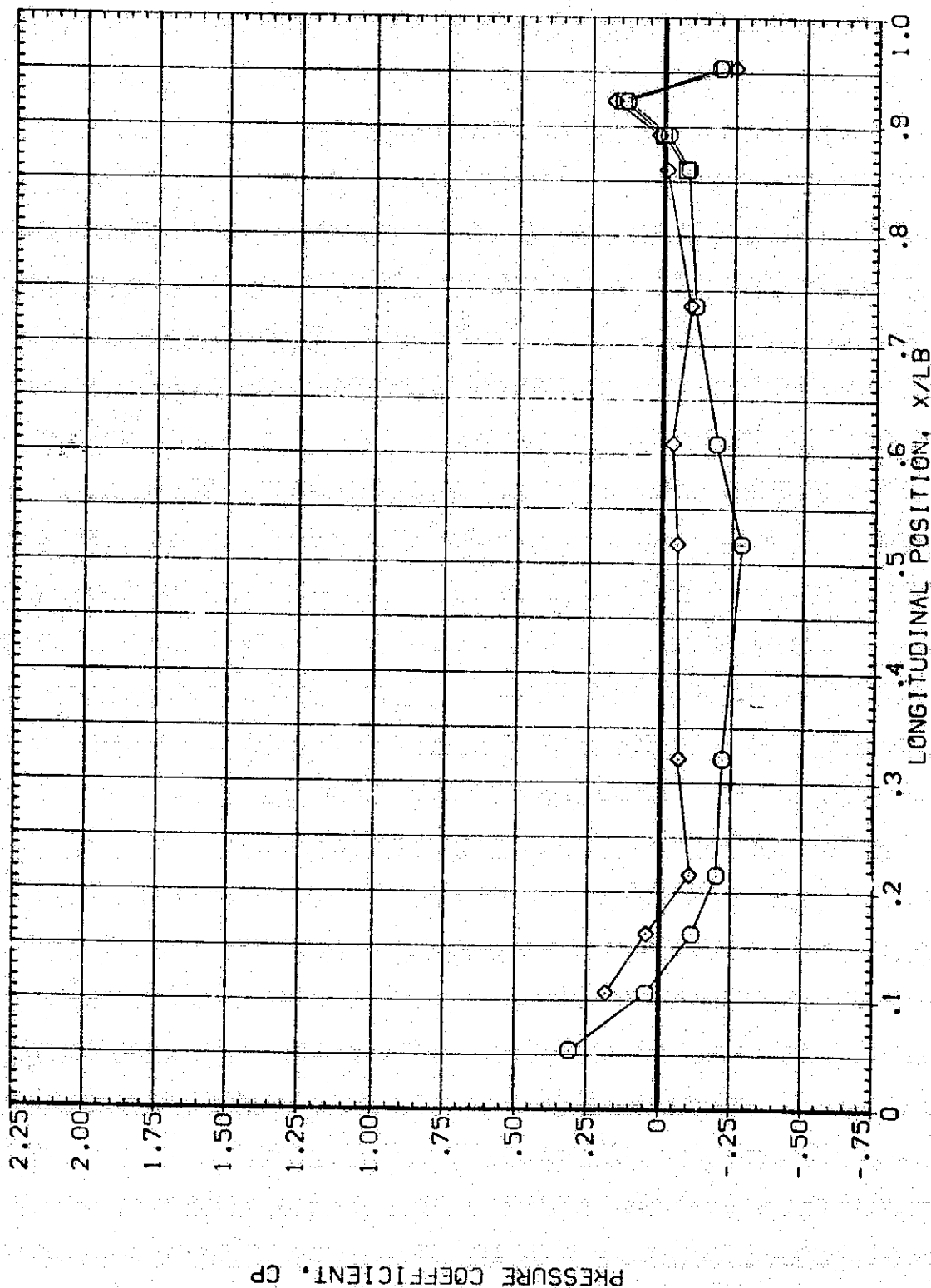


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA058)

SYMBOL THETA ALPHA MACH  
 O .000 20.740 1.960  
 □ 14.000  
 ◇ 24.000

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI 270.000

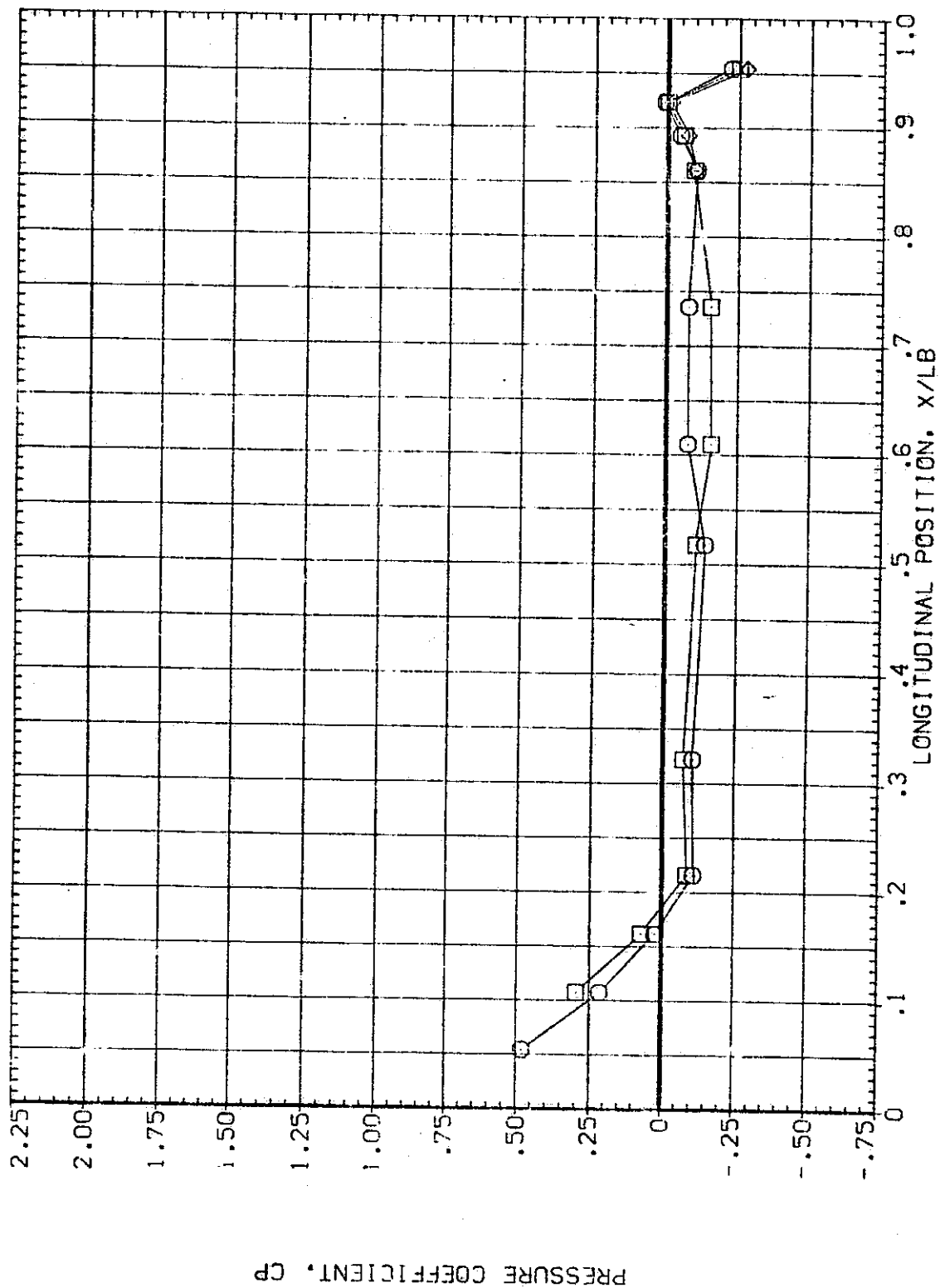


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ◇  
 □  
 ○

THETA  
 45.000  
 57.500  
 90.000

ALPHA  
 20.740

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000

OFFSET  
 20.000  
 270.000

PHI

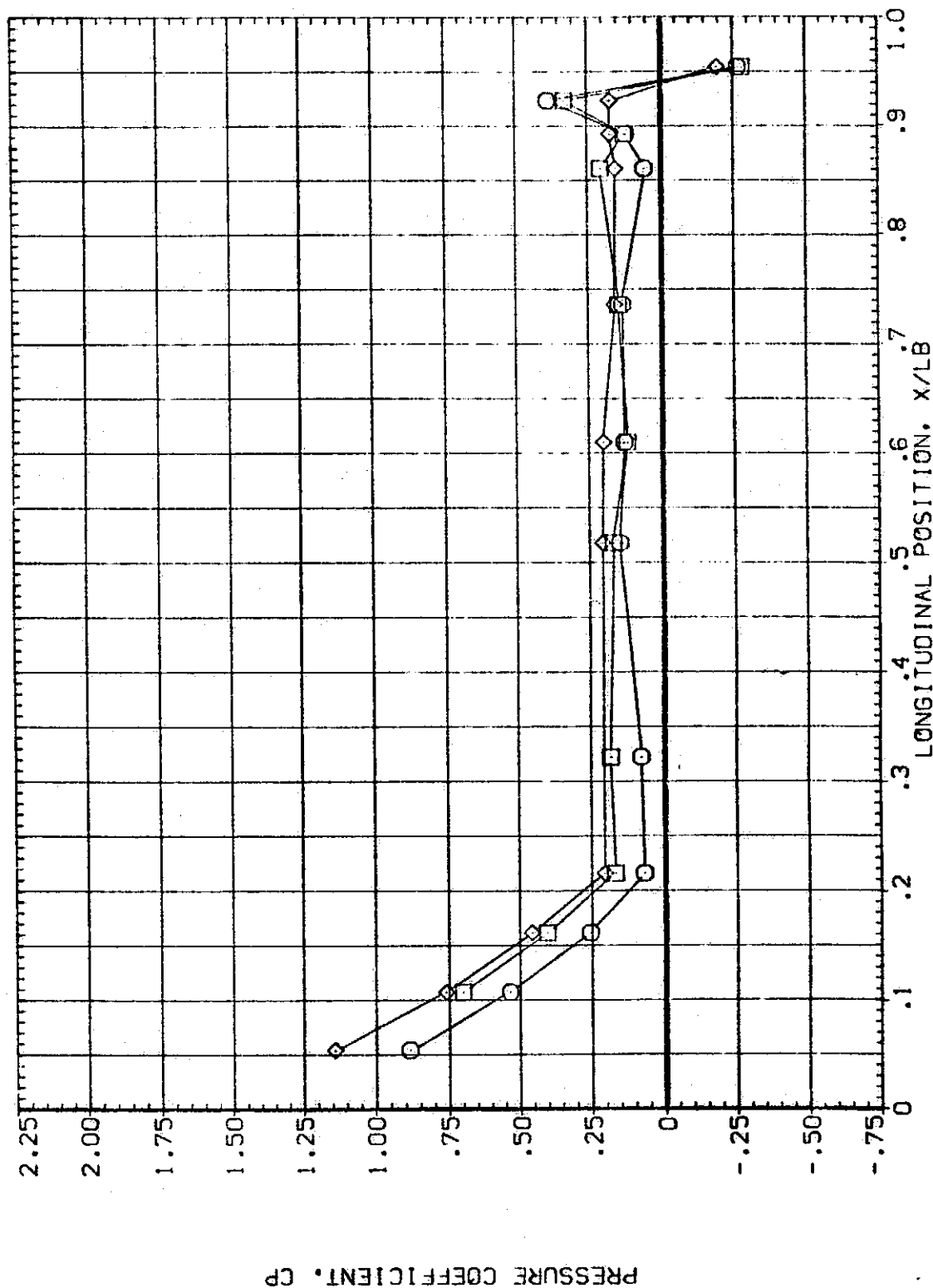


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA058)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
◇	112.500	20.740	1.960	MOUNT	.000	20.000
□	135.000				1.000	270.000
○	157.500					

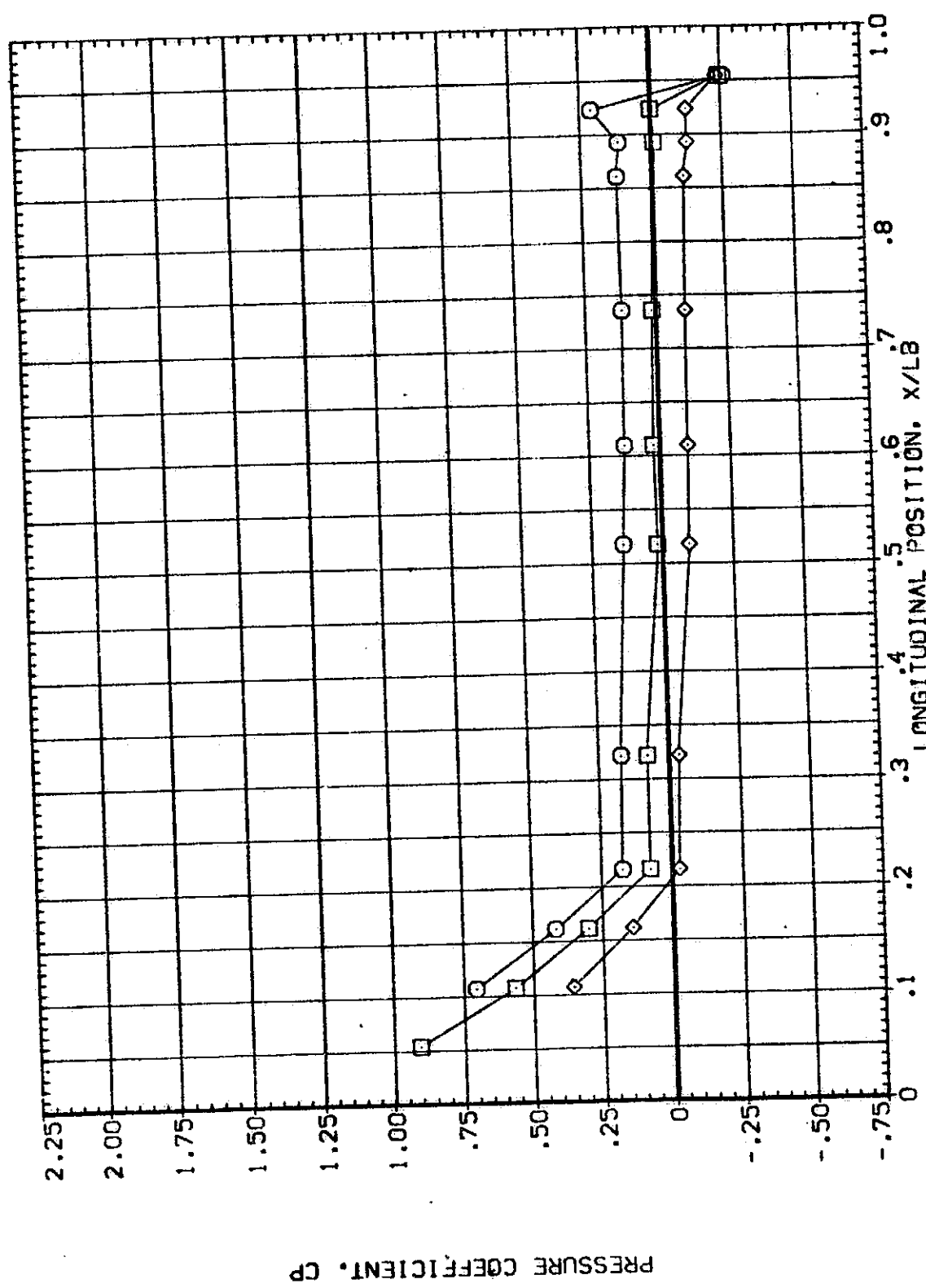


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA058)

SYMBOL  
 ○ □ ◇

THETA  
 180.000  
 232.500  
 225.000

ALPHA  
 20.740

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 .000  
 1.000 1.000  
 PH1 PH1

20.000  
 270.000

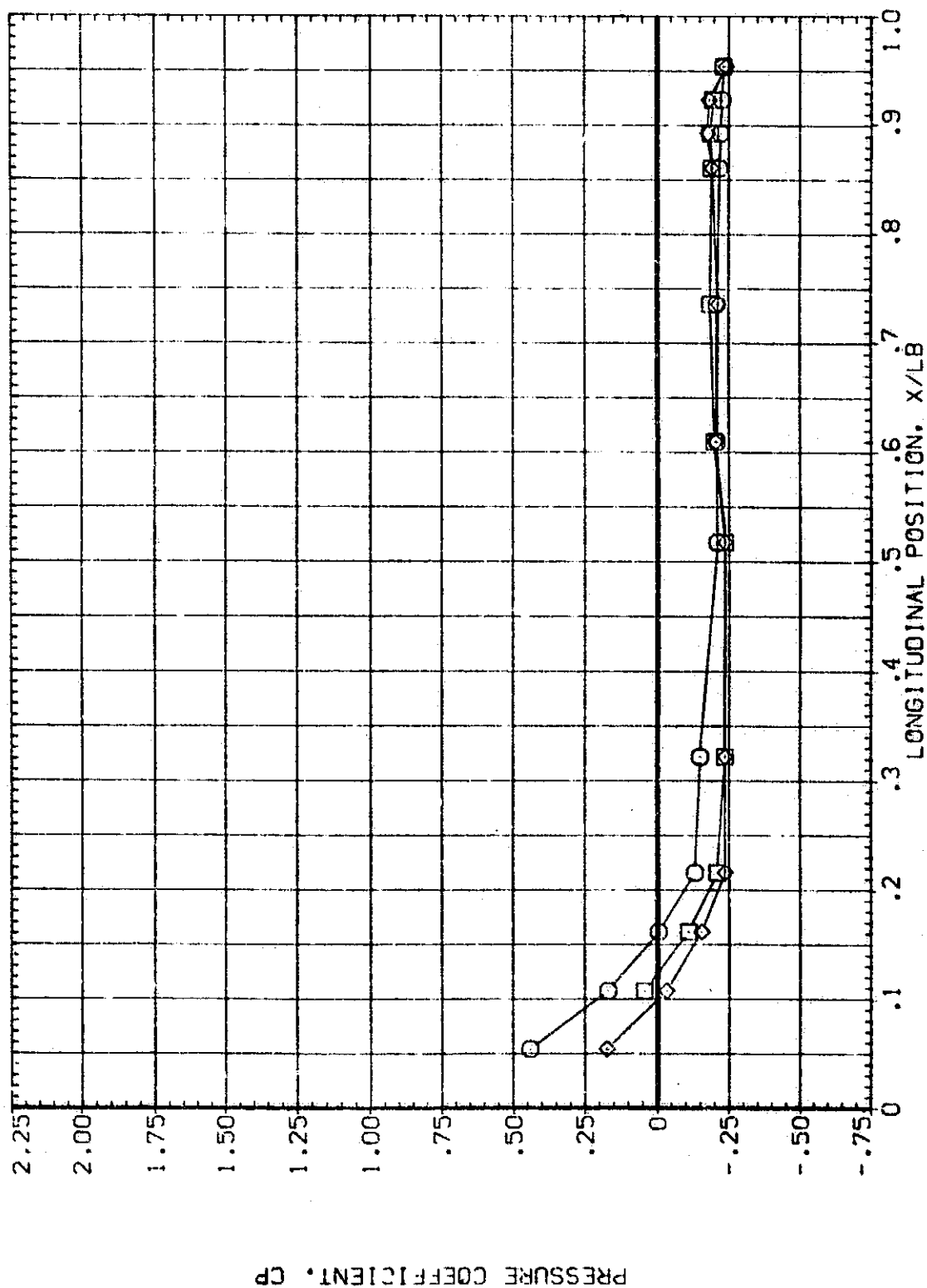


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA058)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 247.500  
 270.000  
 292.500

ALPHA  
 20.740

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI  
 20.000  
 270.000

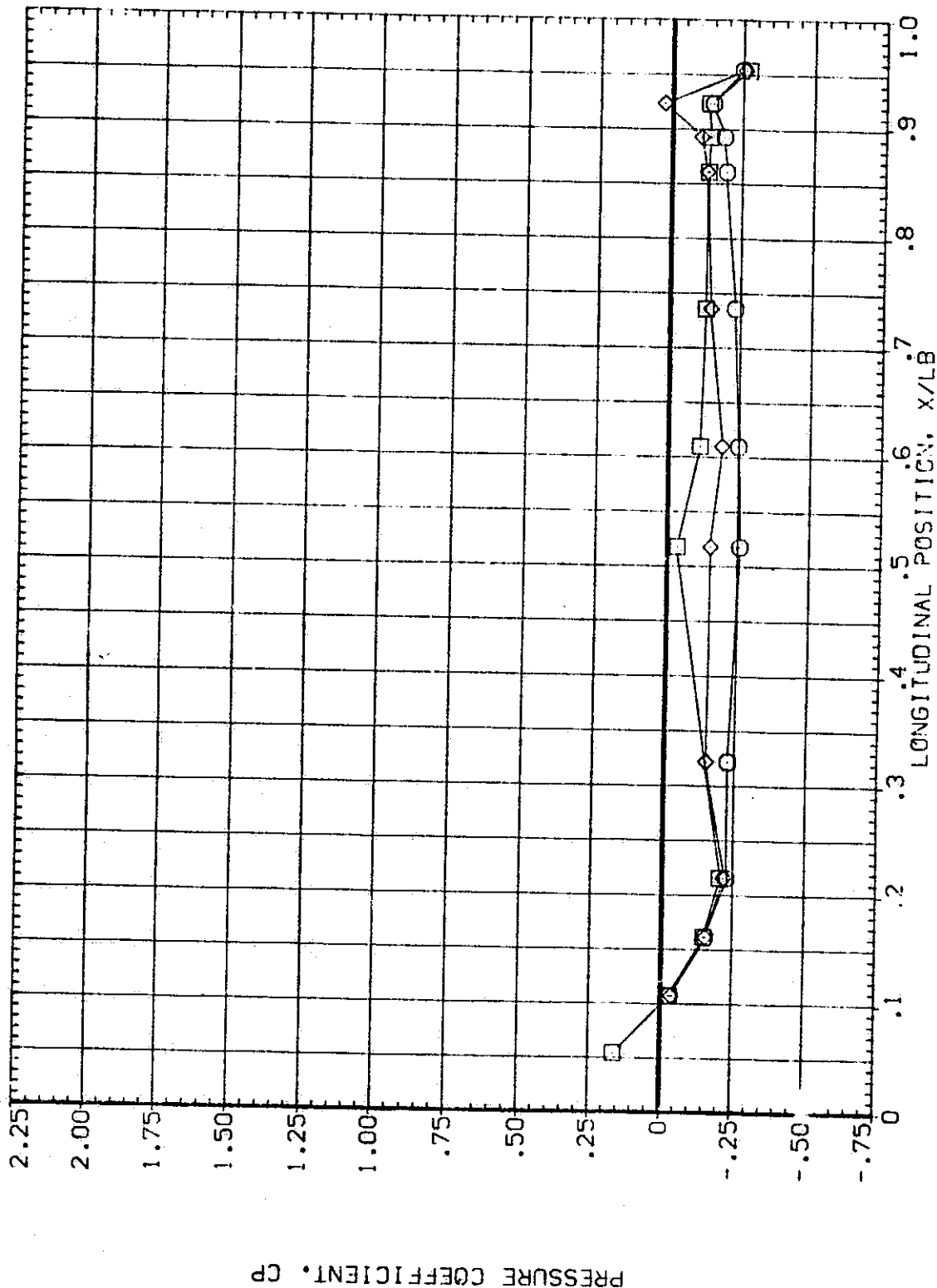


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

SYMBOL  
 □  
 ○  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 20.740

MACH  
 1.960

PARAMETRIC VALUES

BETA  
 MOUNT

.000  
 1.000  
 20.000  
 270.000

PHI

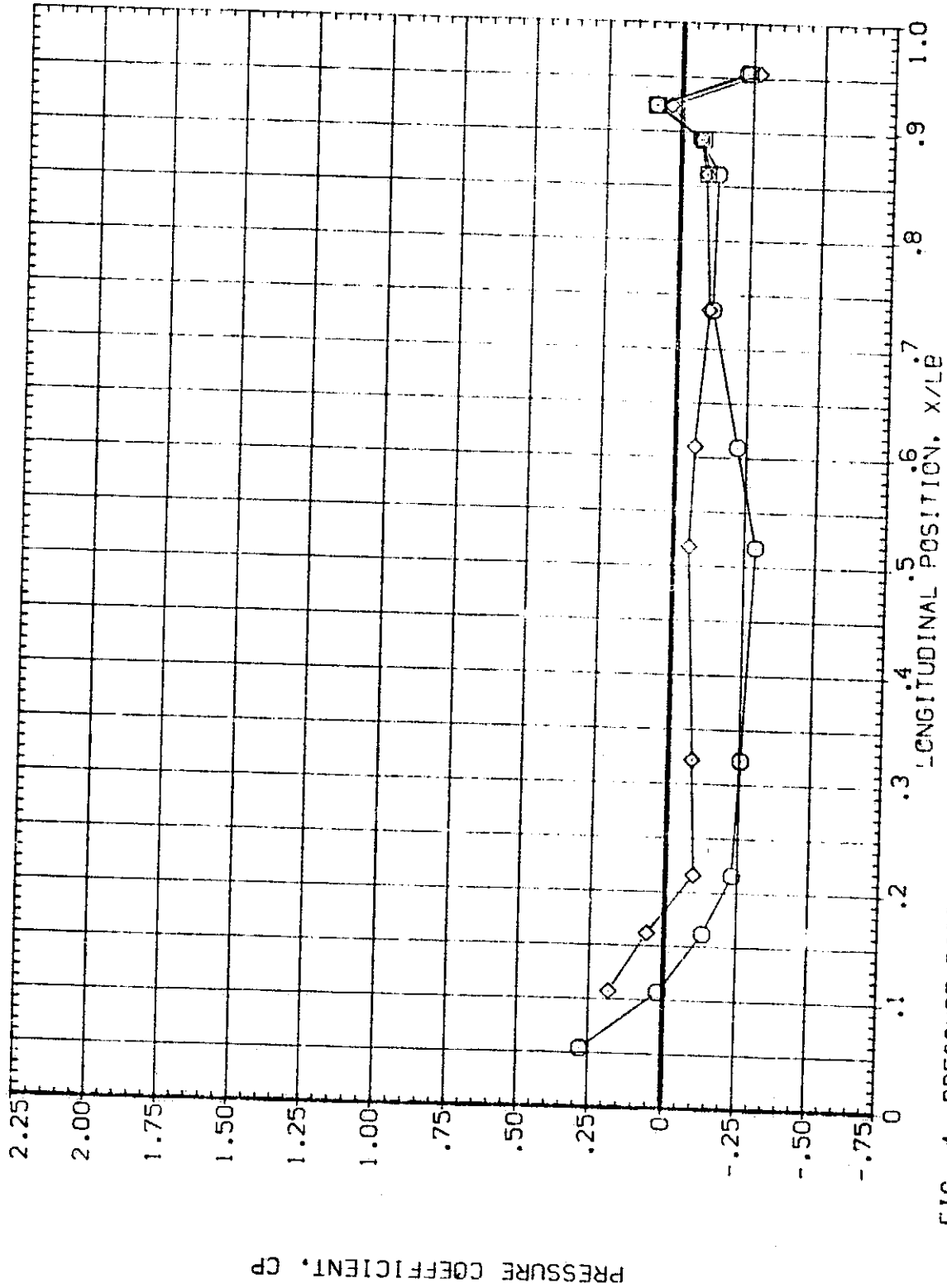


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A059)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES		
	.000	14.000	24.850	24.850	1.960	1.960	BETA	OFFSET	PHI
□							MOUNT	1.000	270.000
◇								20.000	

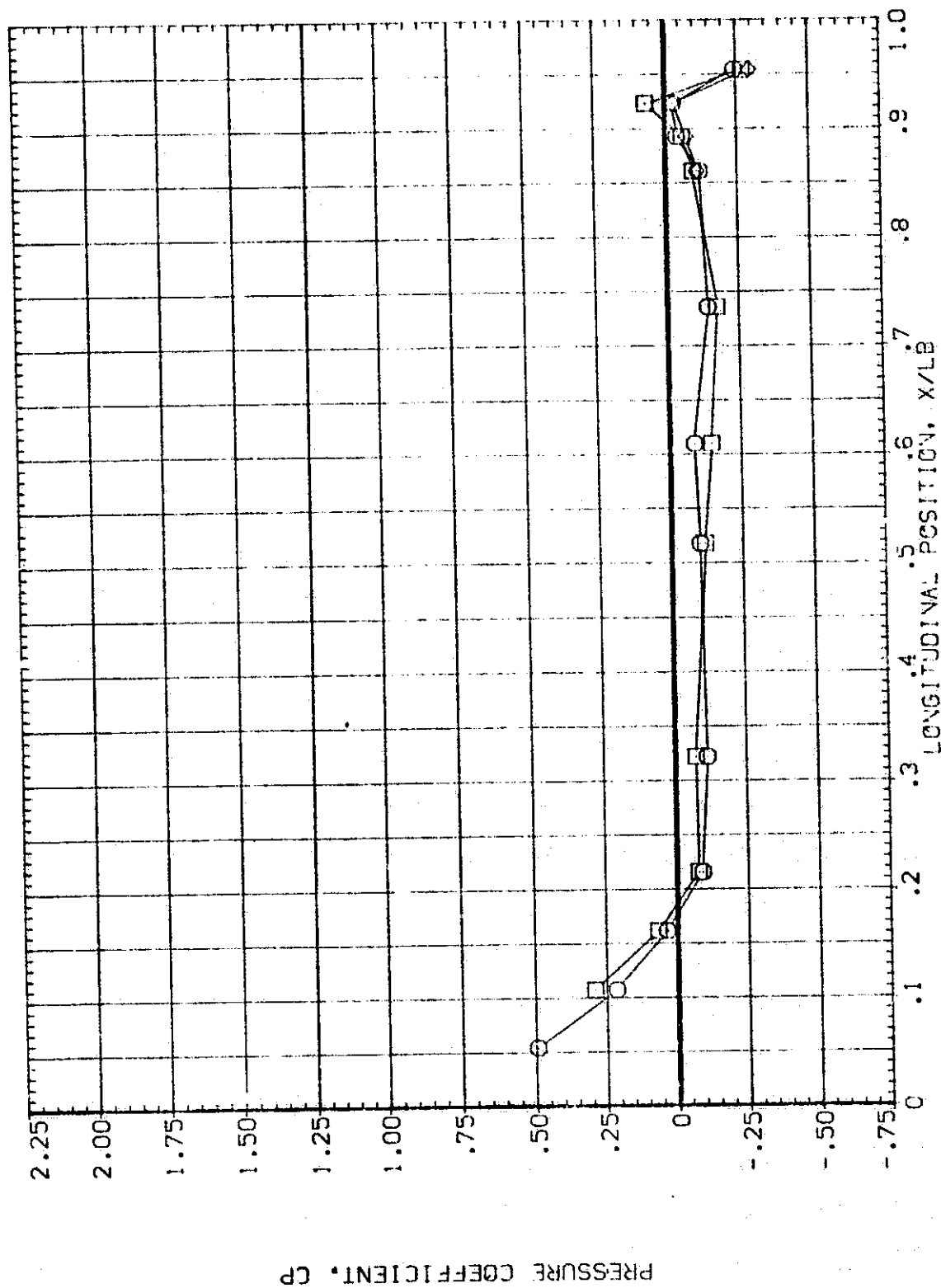


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 57.500  
 90.000

ALPHA  
 24.850

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 20.000  
 270.000

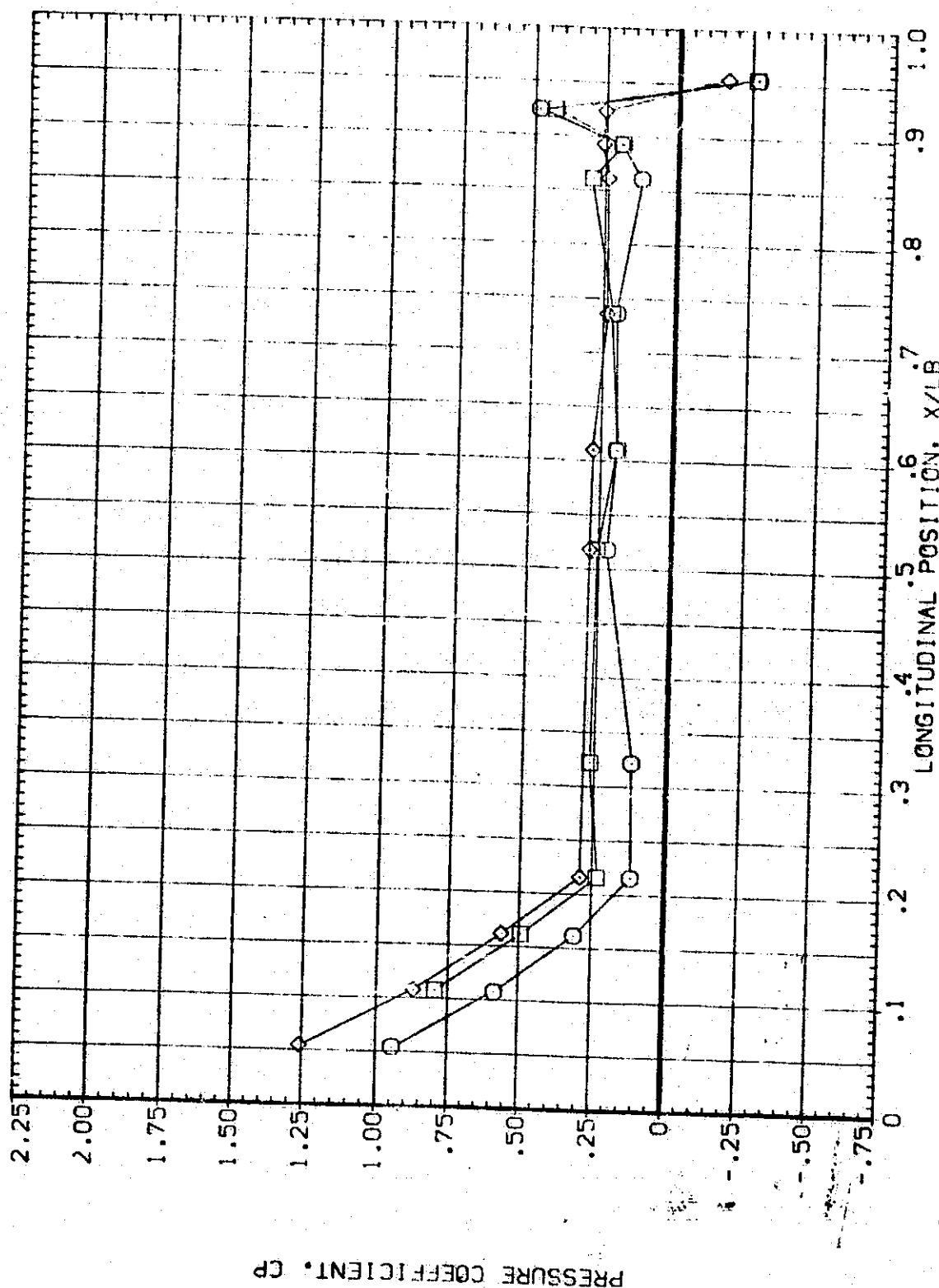


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A059)

SYMBOL THETA ALPHA MACH  
 O 112.500 24.850 1.960  
 □ 135.000  
 ◇ 157.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 270.000

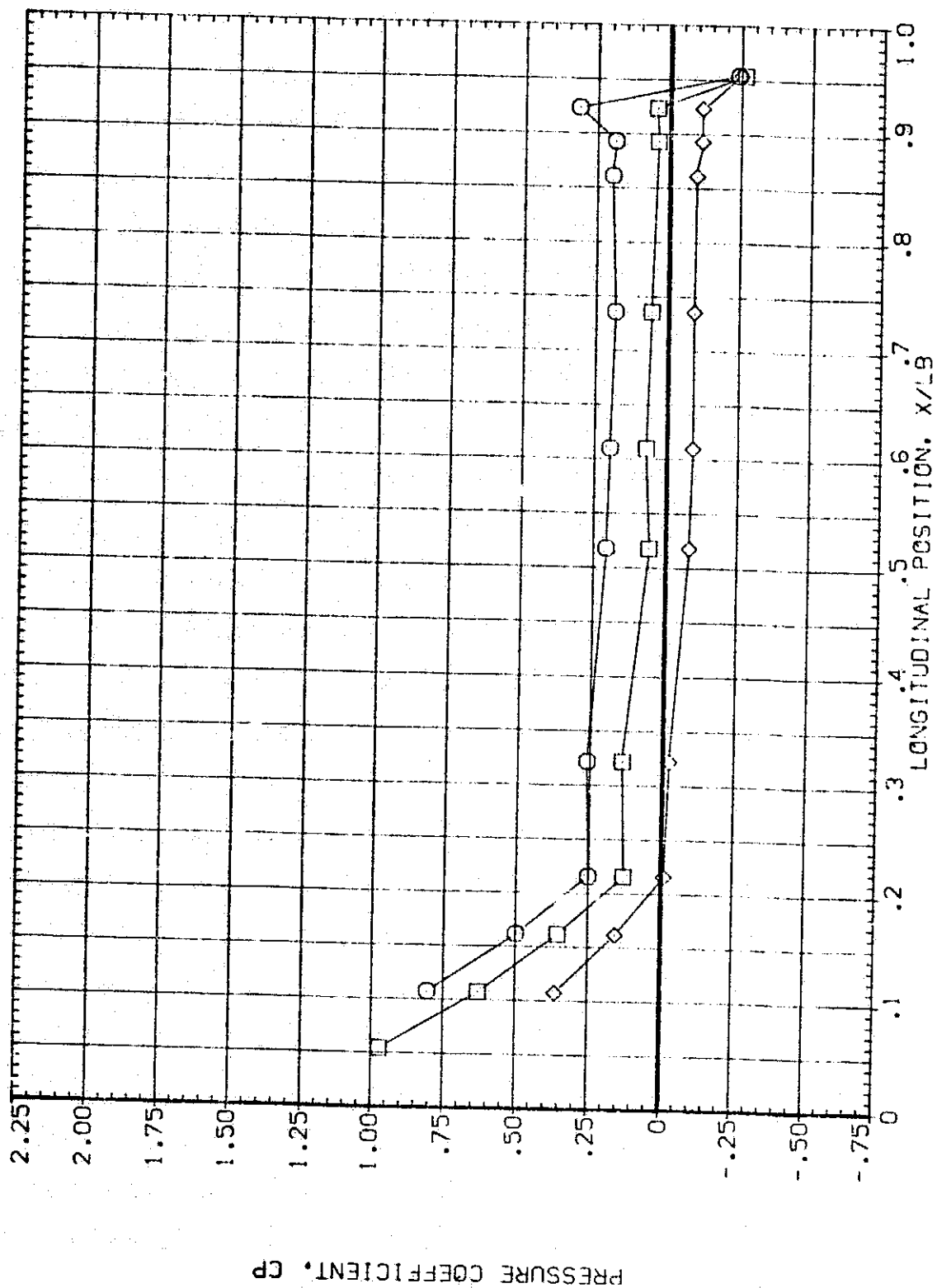


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 190.000  
 232.500  
 225.000

ALPHA  
 24.850

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000

20.000  
 270.000

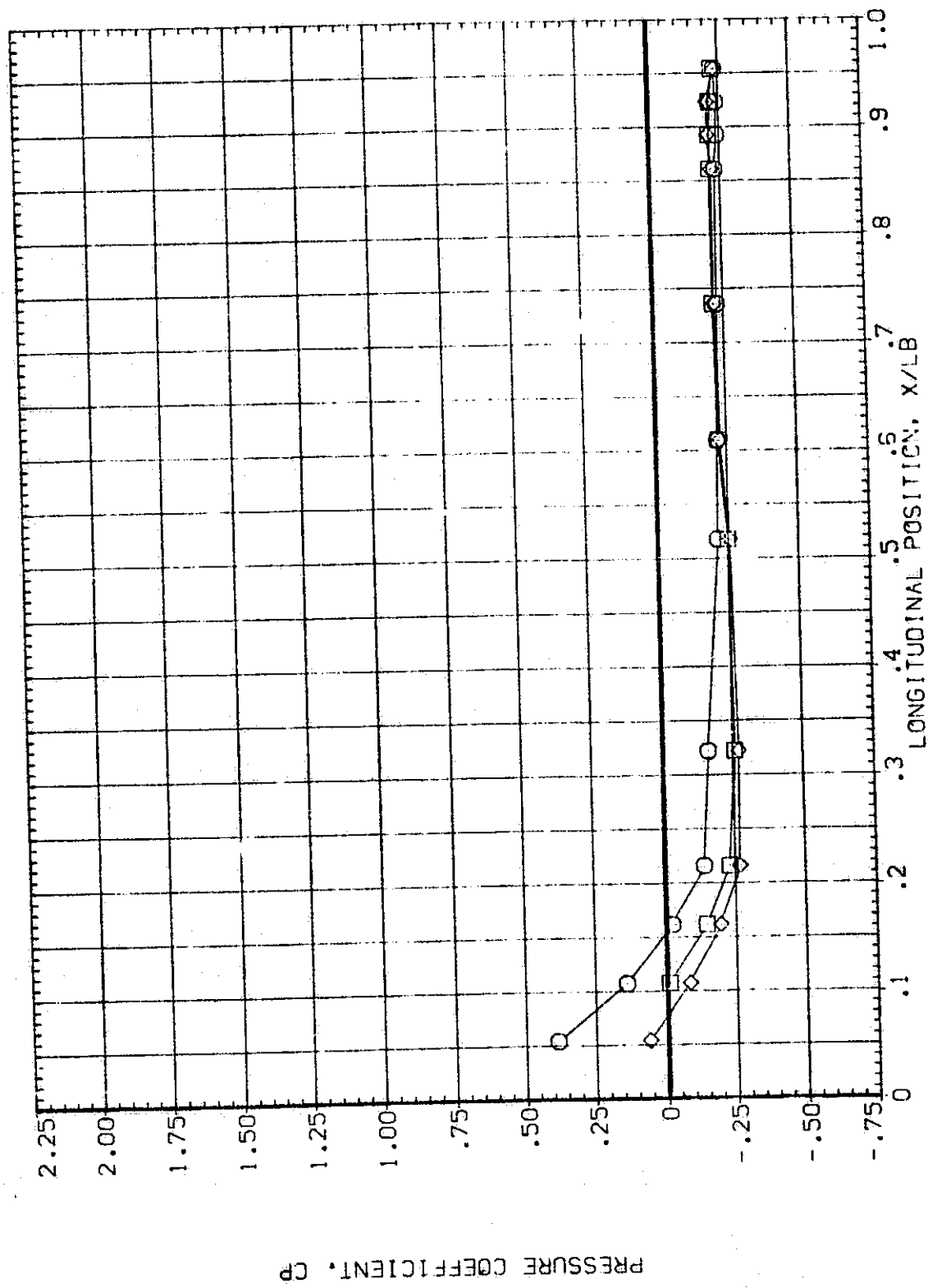


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA059)

SYMBOL	THETA	ALPHA	MACH
○	247.500	24.850	1.960
□	270.000		
◇	292.500		

PARAMETRIC VALUES			
BETA	OFFSET	PHI	
HOUNT	1.000		
			20.000
			270.000

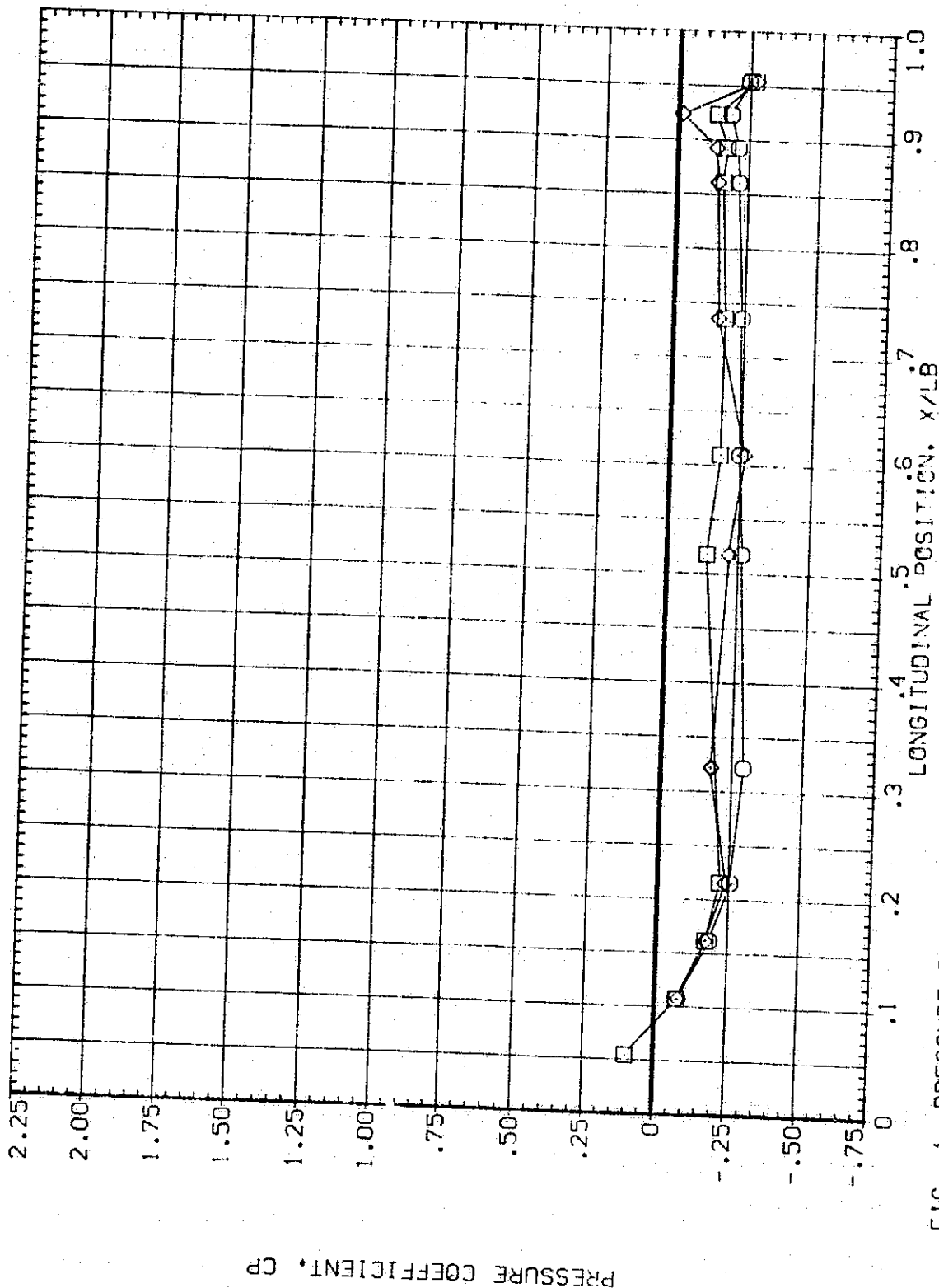


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

SYMBOL  
 ○  
 □  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 24.850

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 20.000  
 270.000  
 OFFSET  
 PHI

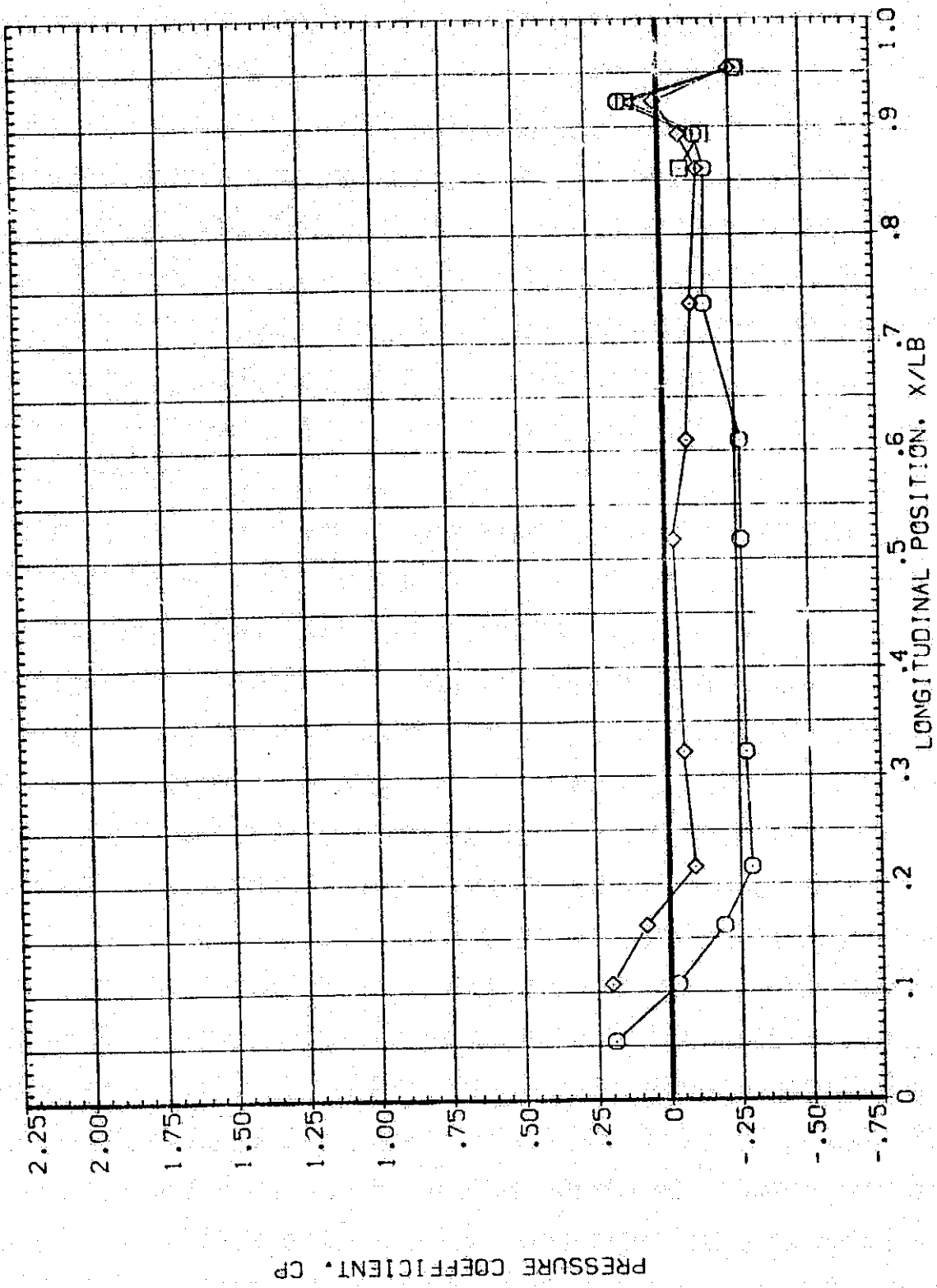


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A060)

SYMBOL

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 28.930

MACH  
 1.960

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 .000 20.000  
 1.000 PHI 270.000

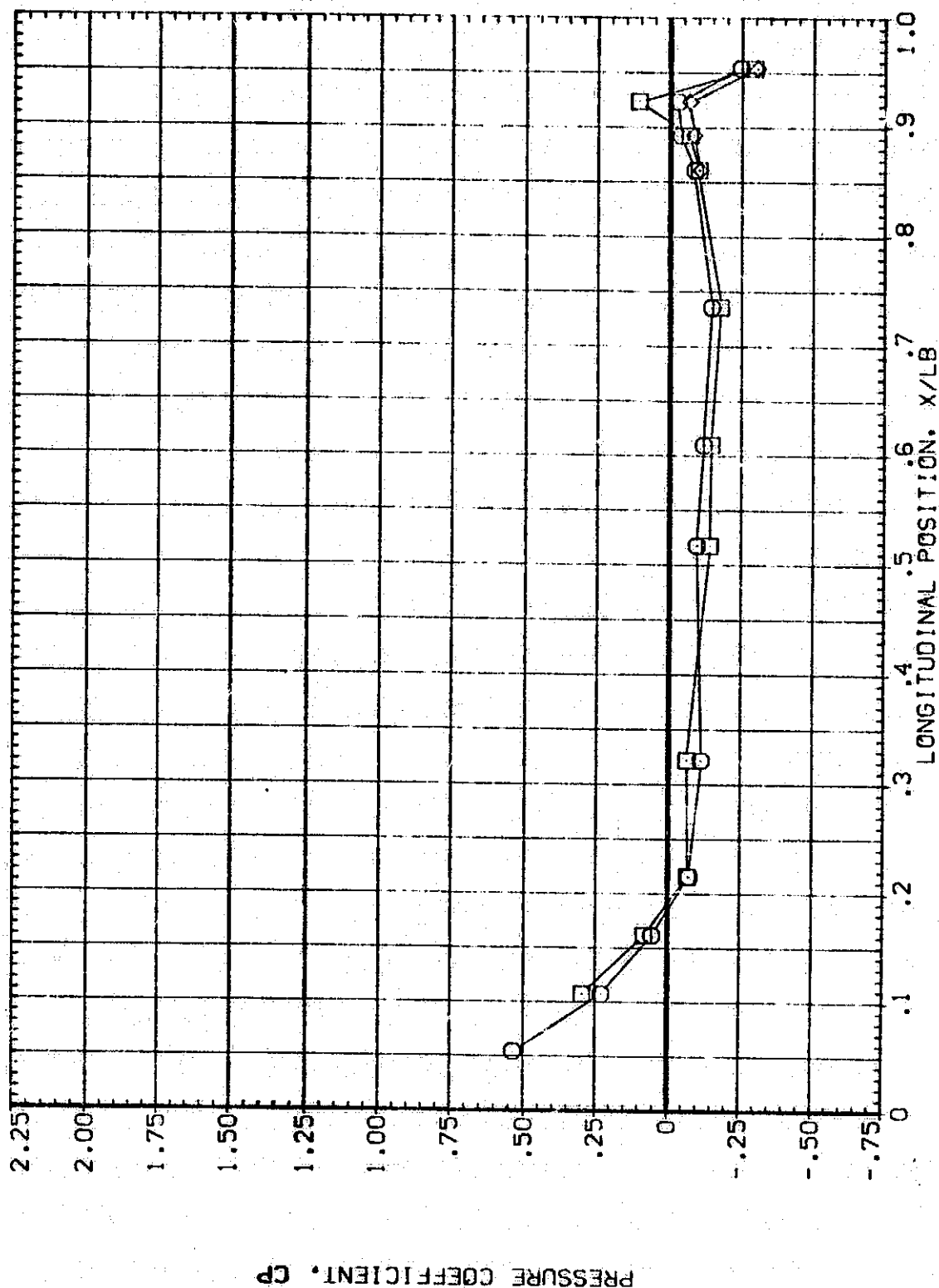


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 45.000  
 57.500  
 90.000

THETA  
 28.930  
 1.960

MACH

PARAMETRIC VALUES  
 -0.000  
 1.000  
 20.000  
 270.000

BETA  
 MOUNT

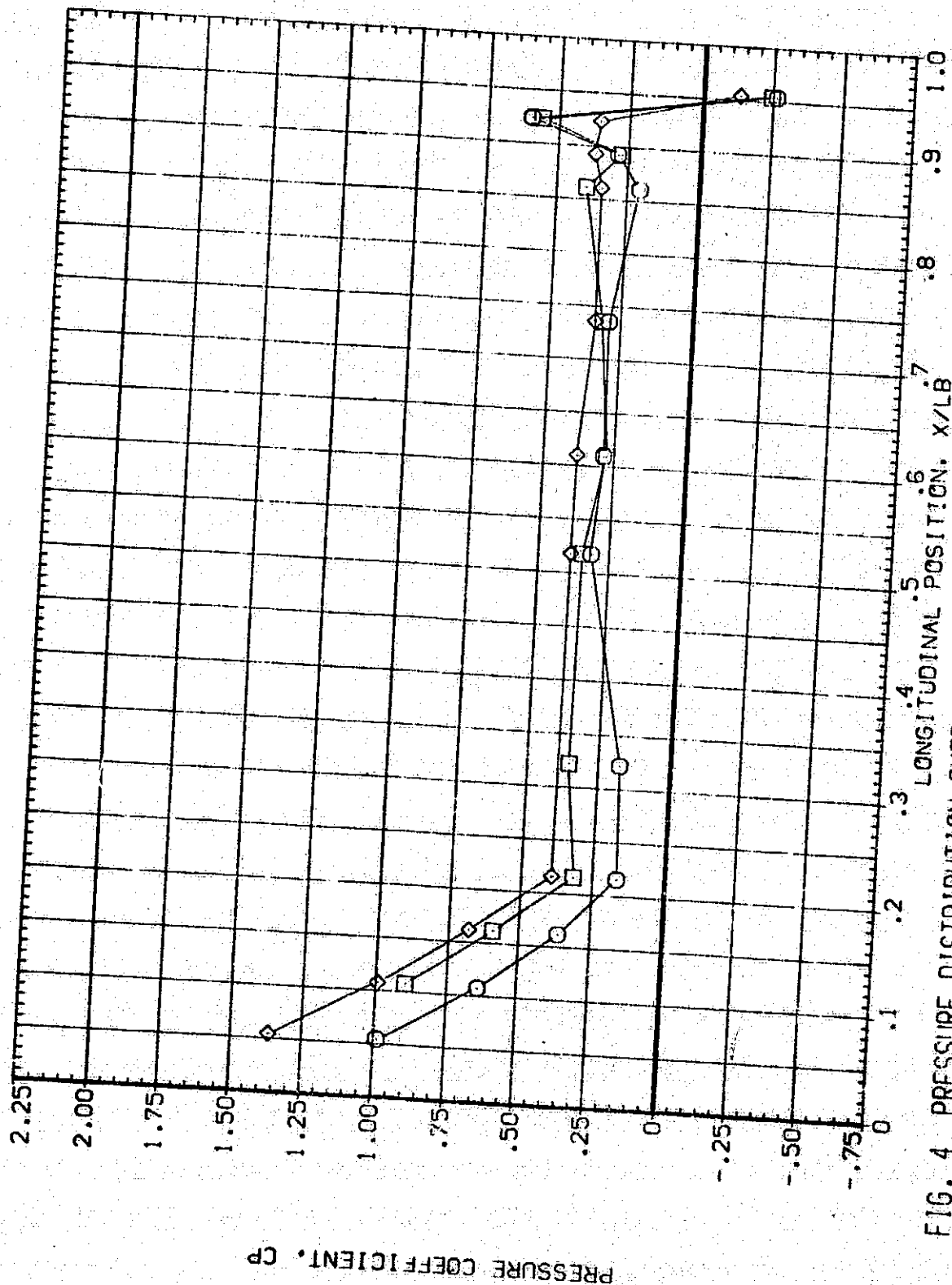


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

24

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (PIA060)

SYMBOL  
○  
□  
◇

THETA 112.500  
135.000  
157.500

ALPHA 28.930

MACH 1.960

PARAMETRIC VALUES  
BETA .000  
MOUNT 1.000  
OFFSE PH1 20.000  
270.000

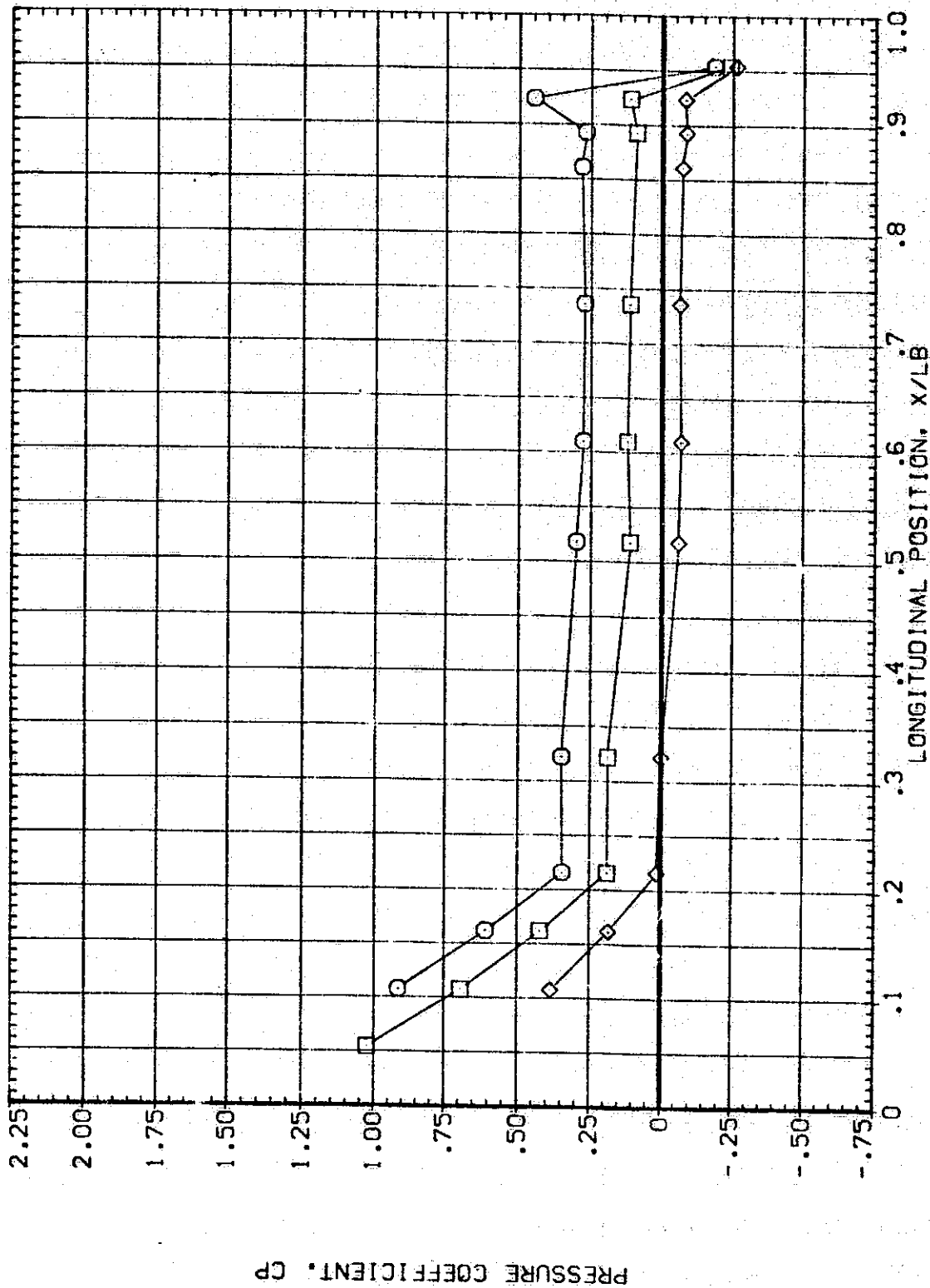


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A060)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	180.000	28.930	1.960	MDUNT	1.000	20.000
□	232.500					270.000
◇	225.000					

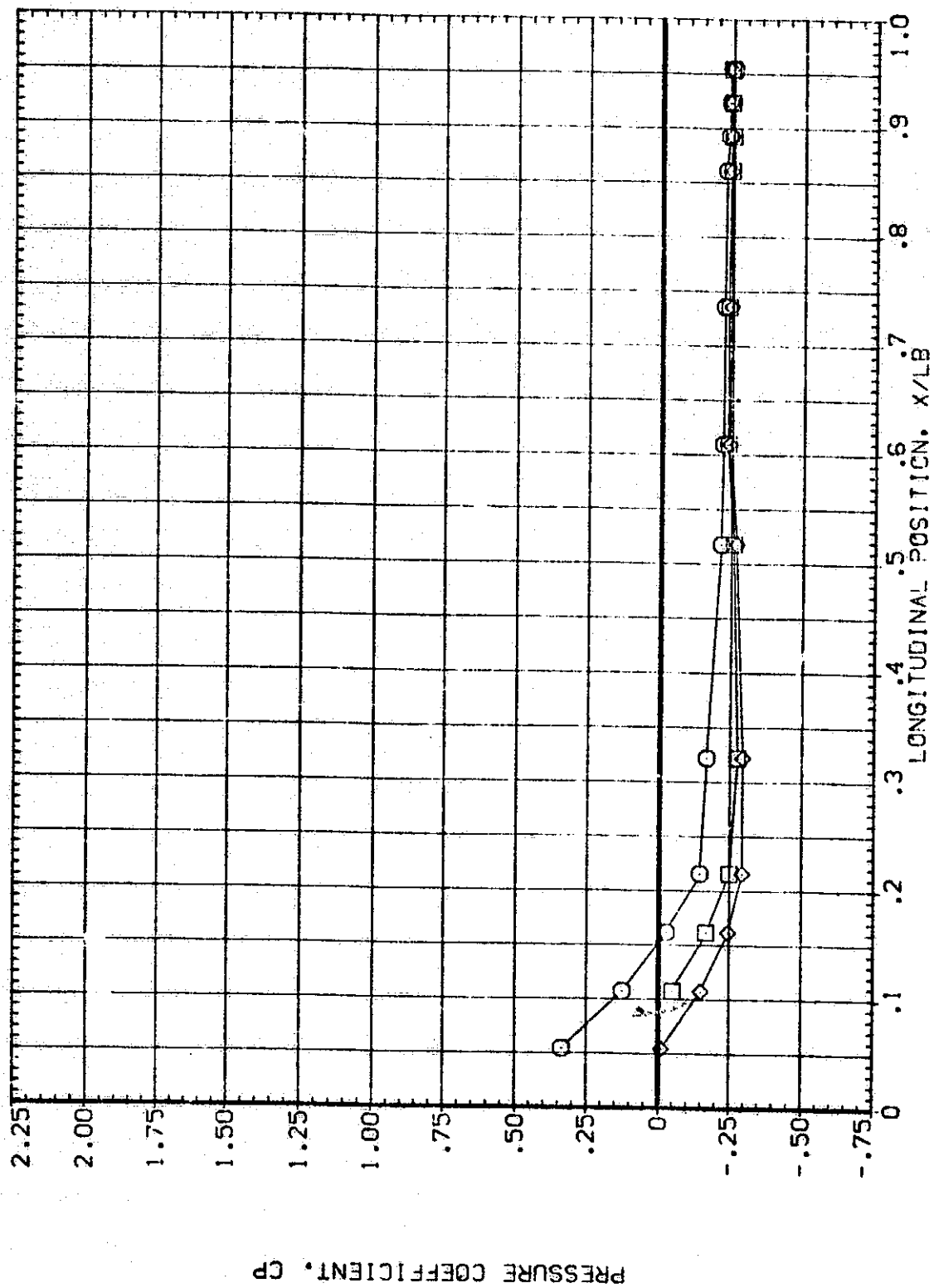


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA060)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	28.930	1.960	1.000	.000	20.000
□	270.000			1.000	.000	270.000
◇	292.500					

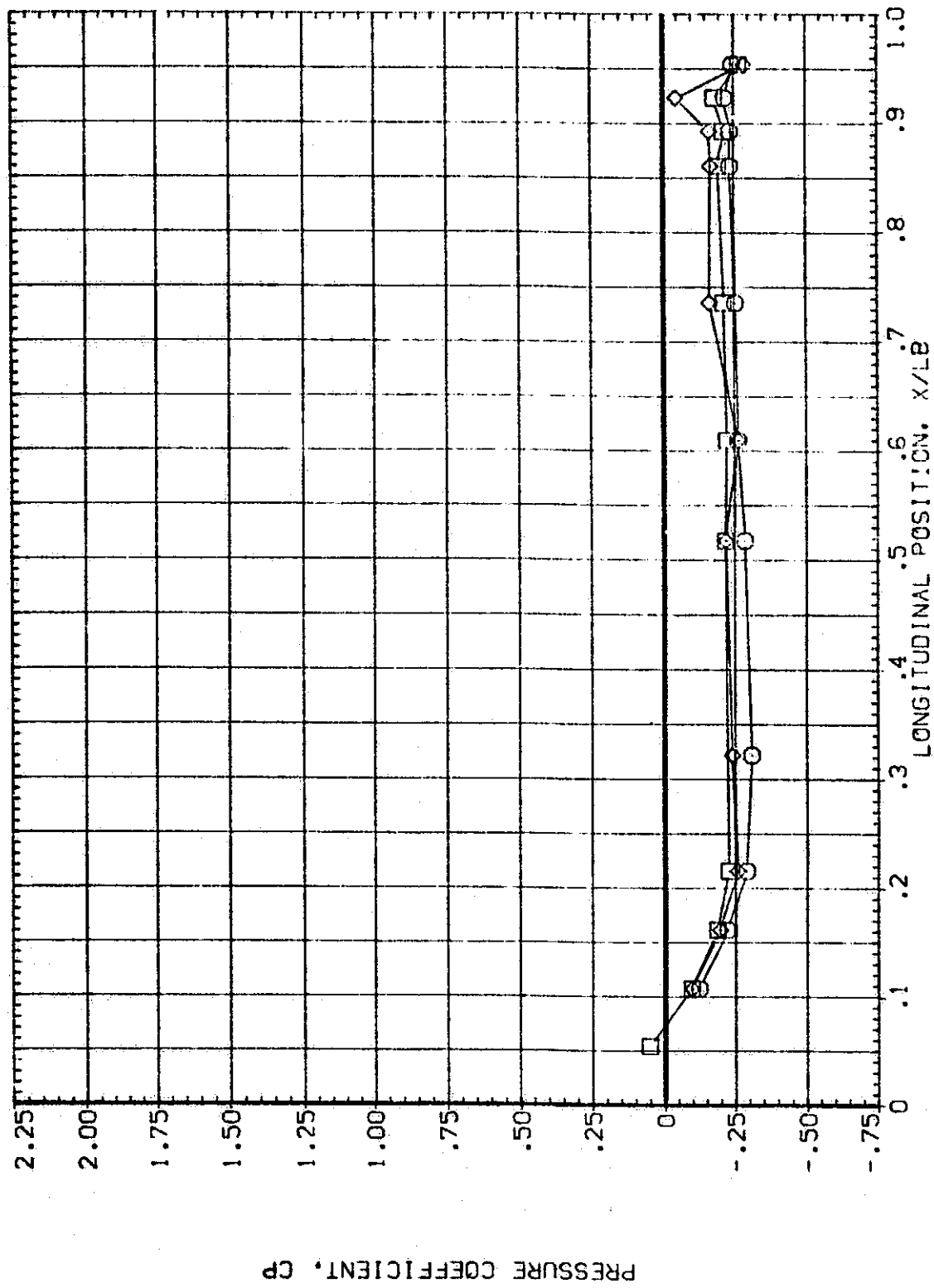


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
○ □ ◇

THETA  
315.000  
326.000  
346.000

ALPHA  
28.930

MACH  
1.960

BETA  
MOUNT

PARAMETRIC VALUES  
.000 .000  
1.000 1.000  
PHI PHI

20.000  
270.000

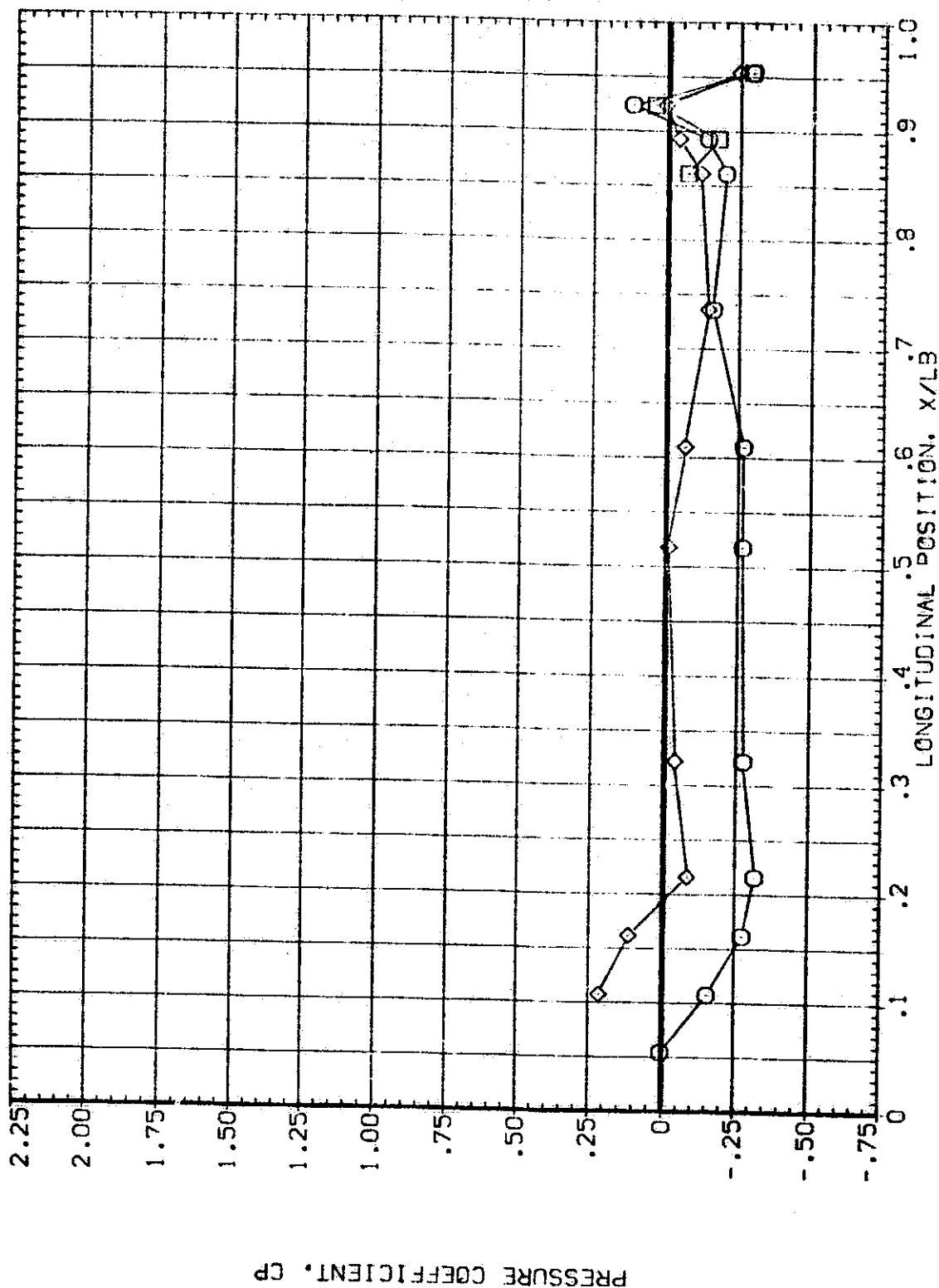


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A001)

SYMBOL THETA ALPHA MACH  
 □ .000 -8.360 3.480  
 ◇ 14.000 24.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PH1  
 .000

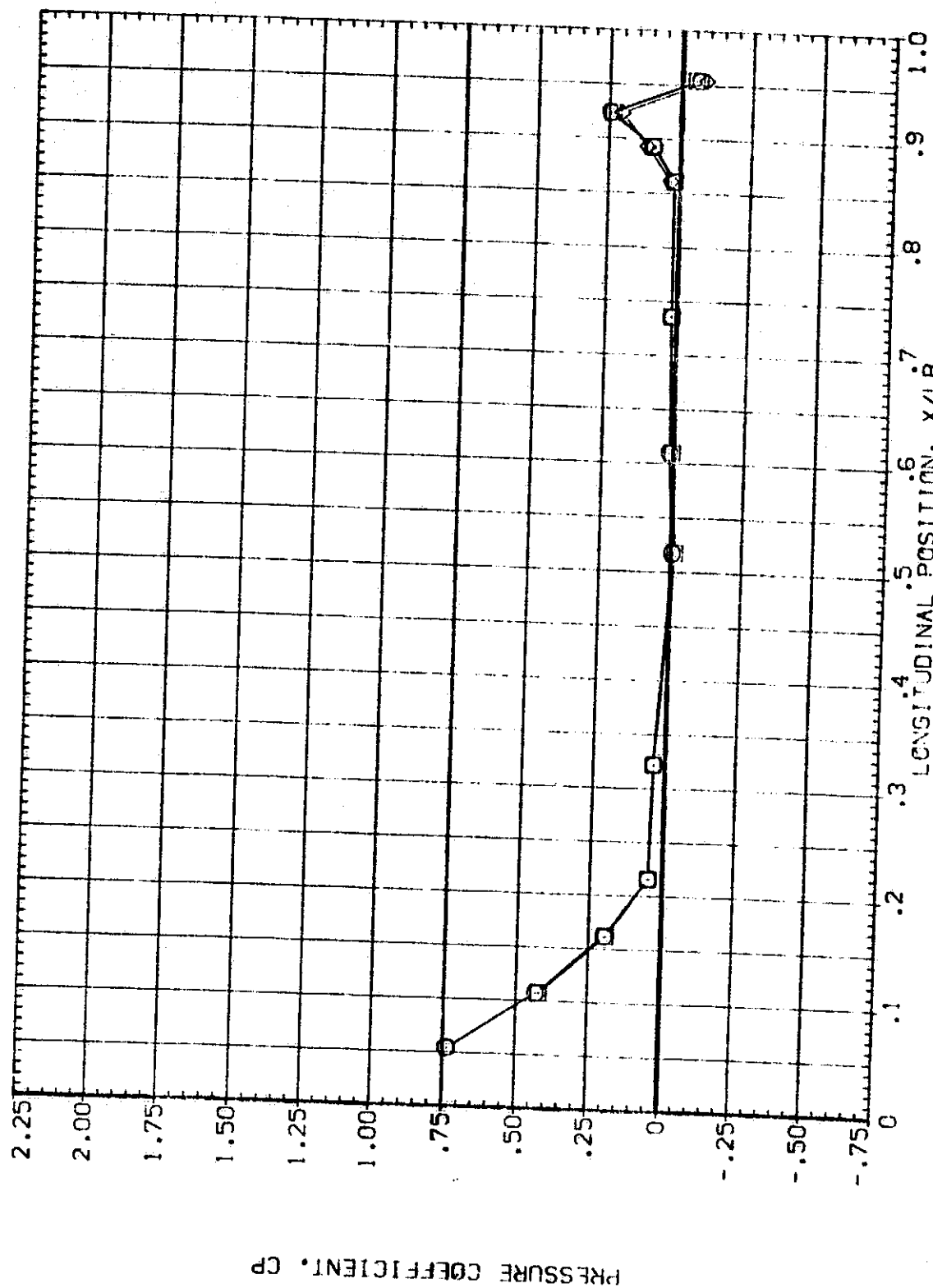


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA001)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 57.500  
 90.000

ALPHA  
 -8.360

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 .000  
 .000  
 .000

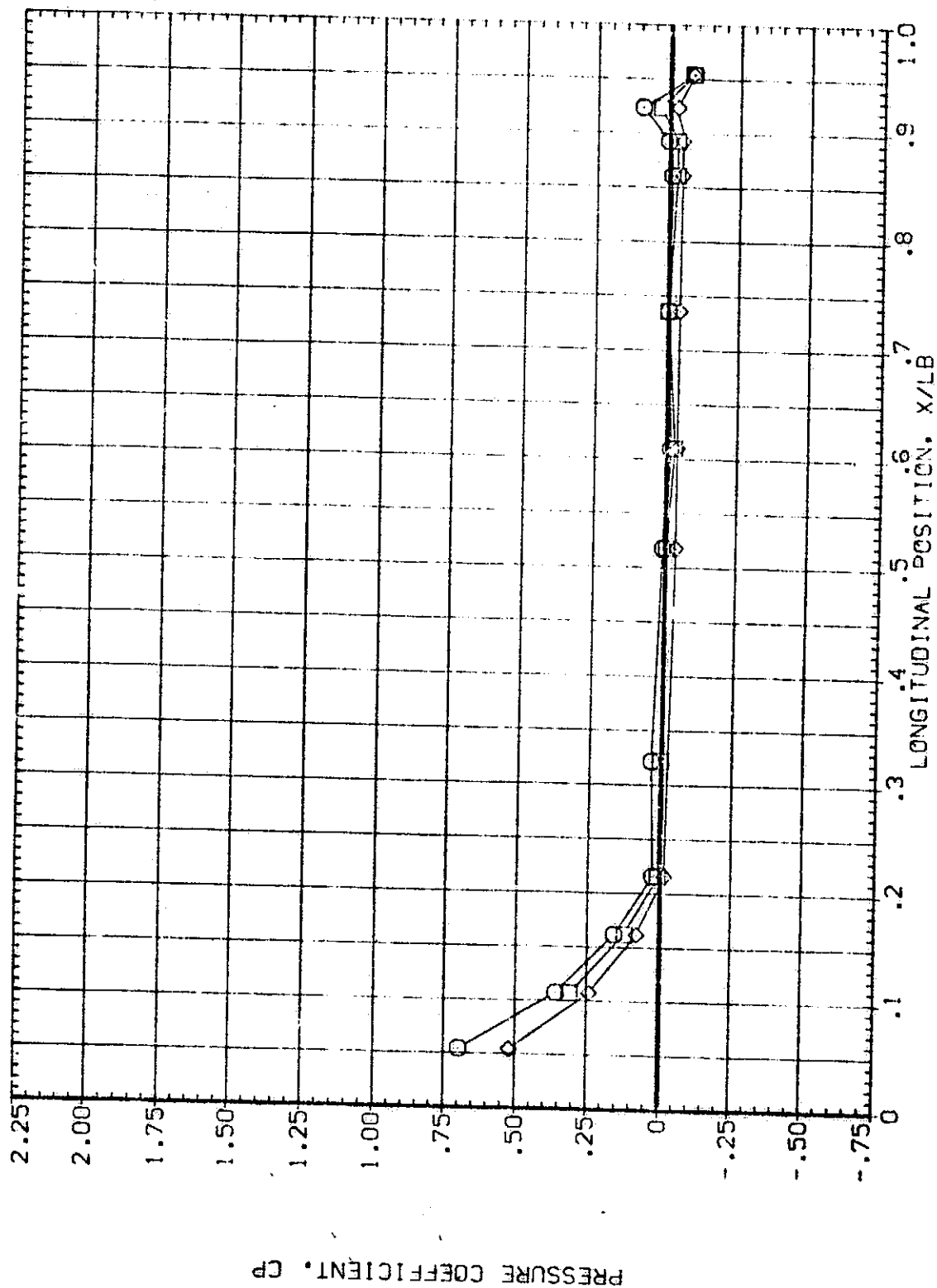


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A001)

SYMBOL    THETA    ALPHA    MACH  
 □    112.500    -8.360    3.480  
 ◇    135.000  
     157.500

PARAMETRIC VALUES  
 .000    .000    .000  
 1.000    OFFSET    PHI

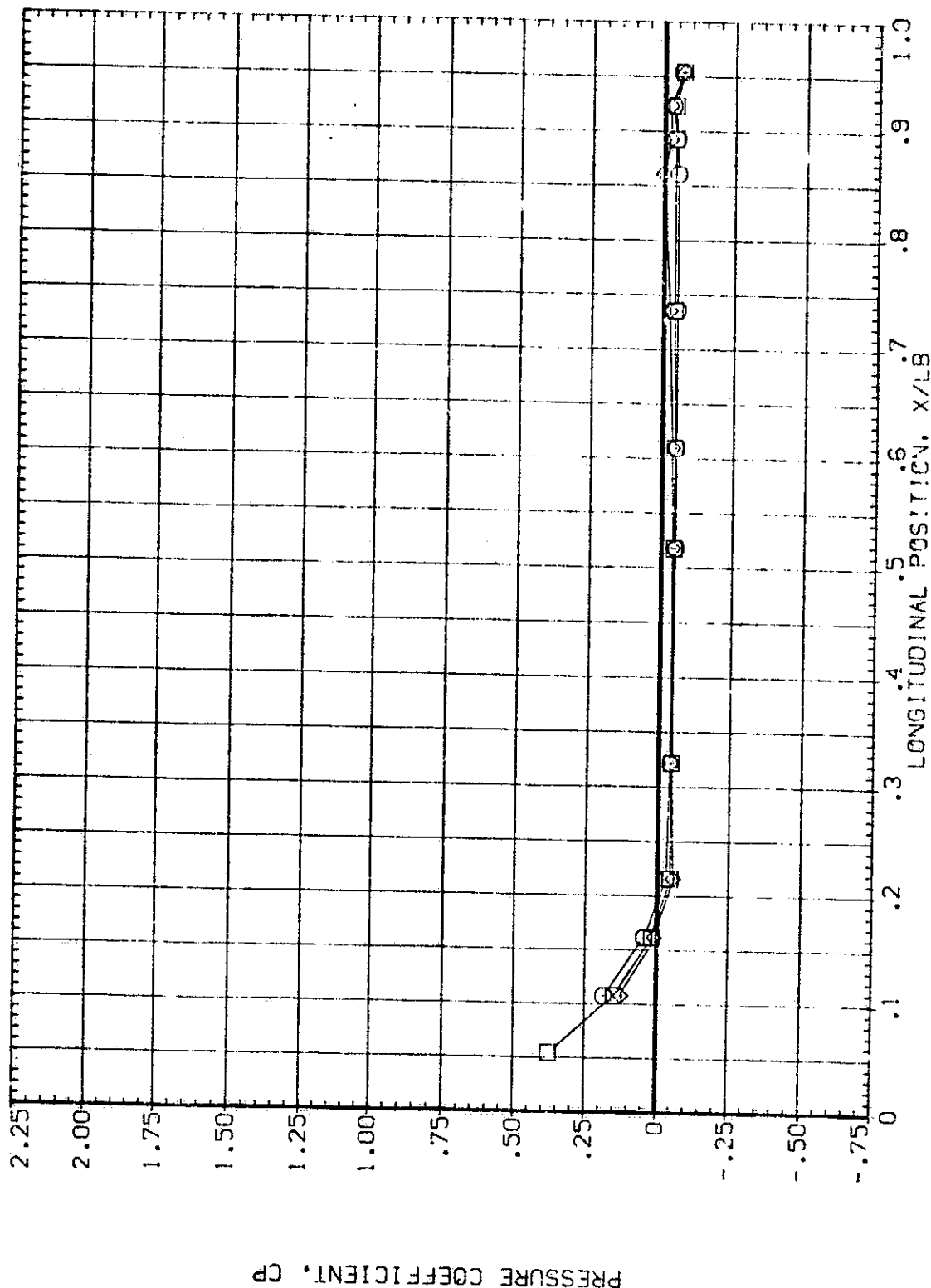


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

SYMBOL THETA ALPHA MACH  
 ○ 180.000 -8.360 3.480  
 □ 232.500  
 ◇ 225.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI .000

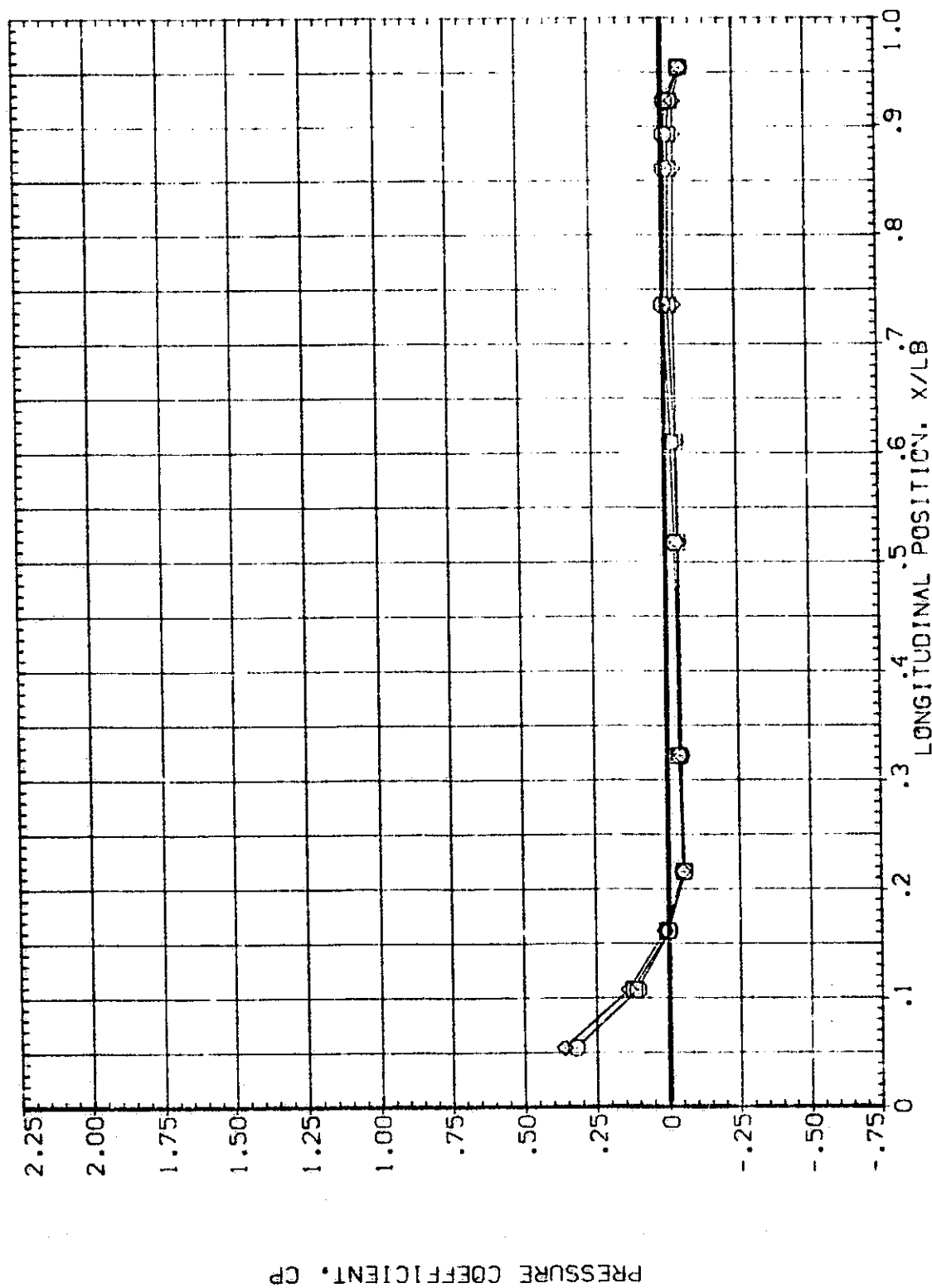


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A001)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
-8.360

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI

.000  
.000

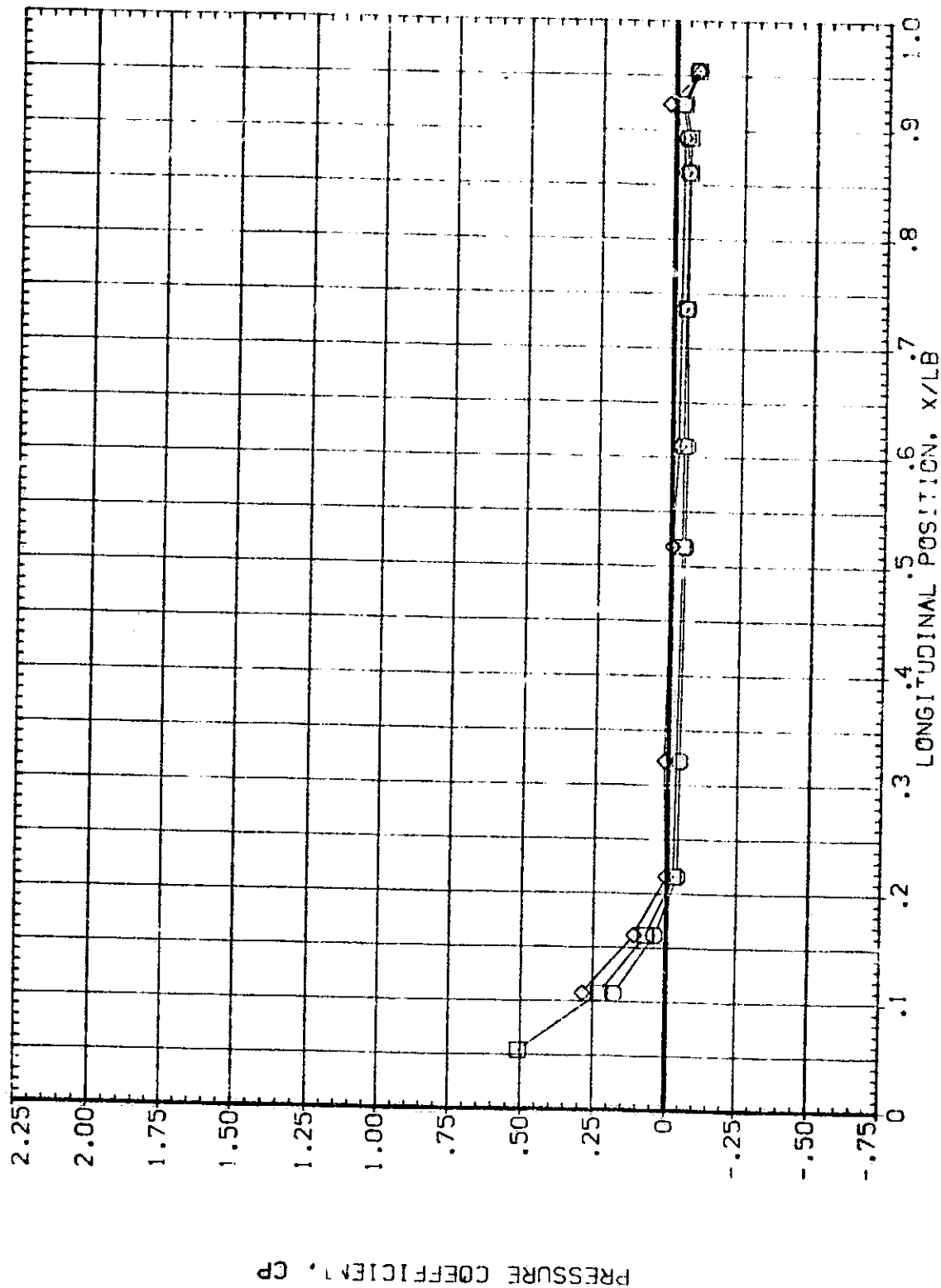


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA001)

SYMBOL  
  
  


THETA 315.000  
 326.000  
 346.000  
 ALPHA -8.360  
 MACH 3.480

PARAMETRIC VALUES  
 BETA .000  
 MOUNT .000  
 OFFSET .000  
 PH: .000

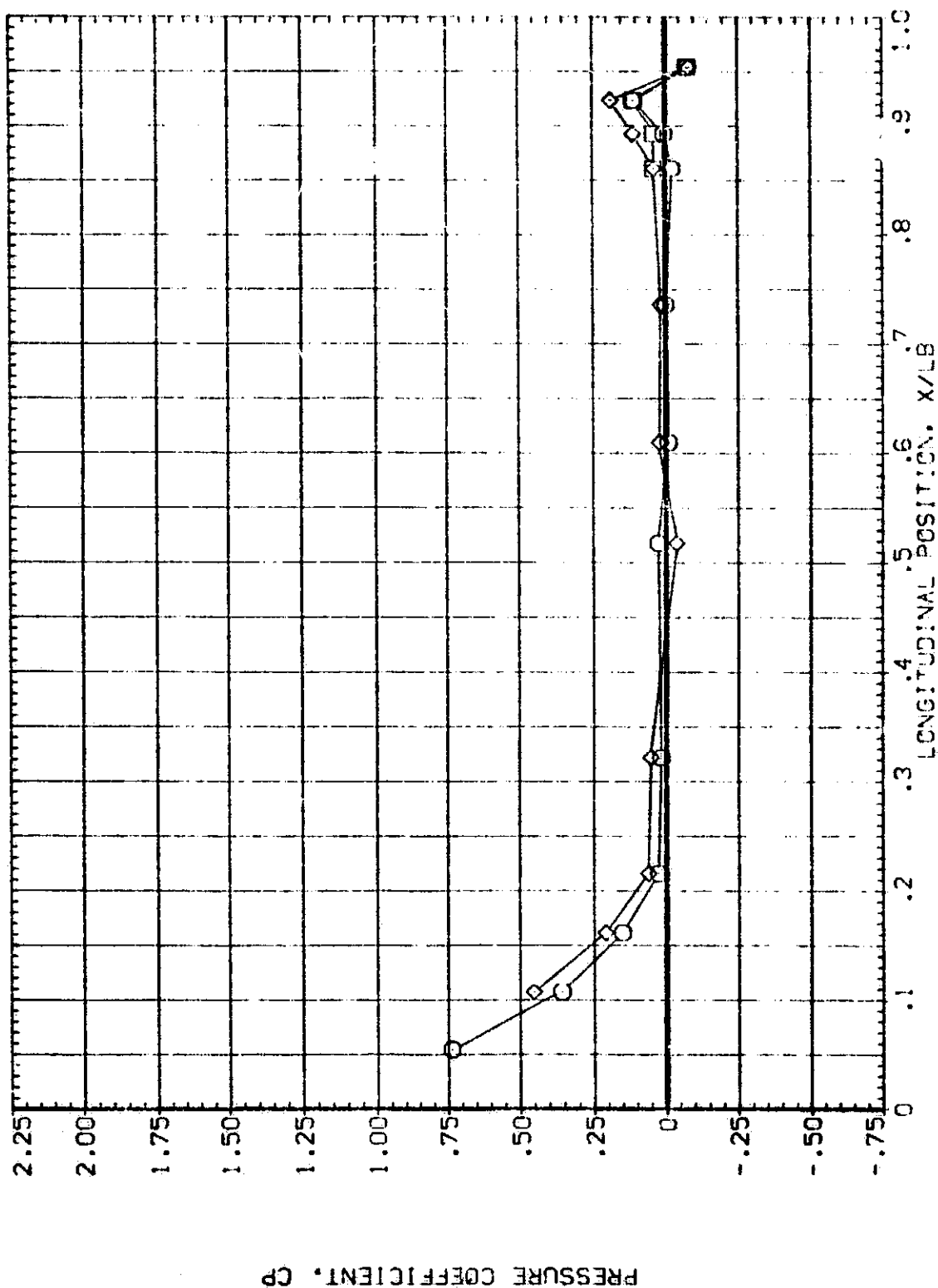


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A002)

PARAMETRIC VALUES  
 .000 .000 .000  
 BETA OFFSET  
 MOUNT PH1

THEIA ALPHA MACH  
 .000 -4.330 3.480  
 14.000  
 24.000

SYMBOL  
 ○ □ ◇

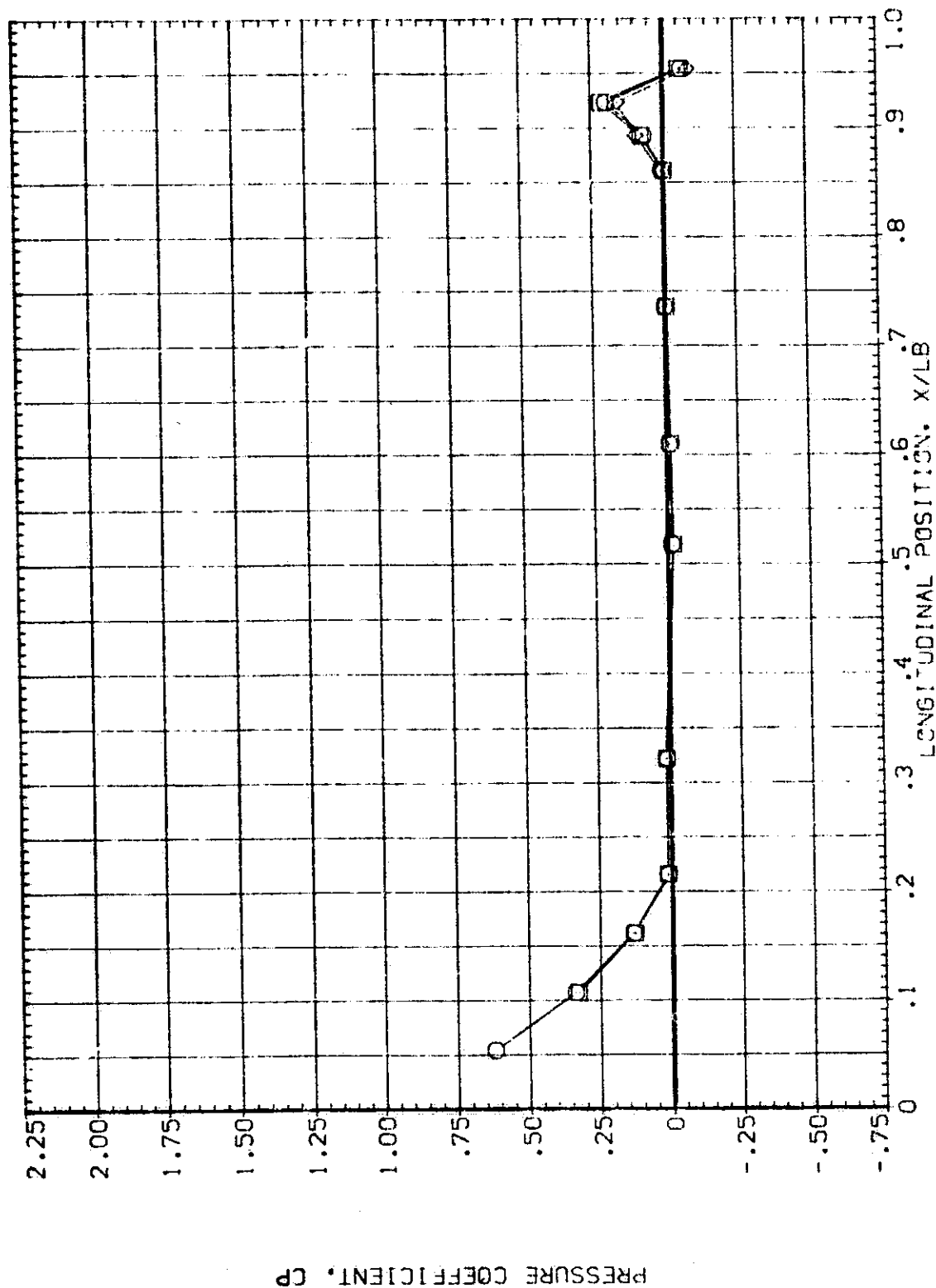


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	45.000	-4.330	3.480	MSUNT	.000 OFFSET
□	57.500				1.000 PHI
◇	90.000				.000

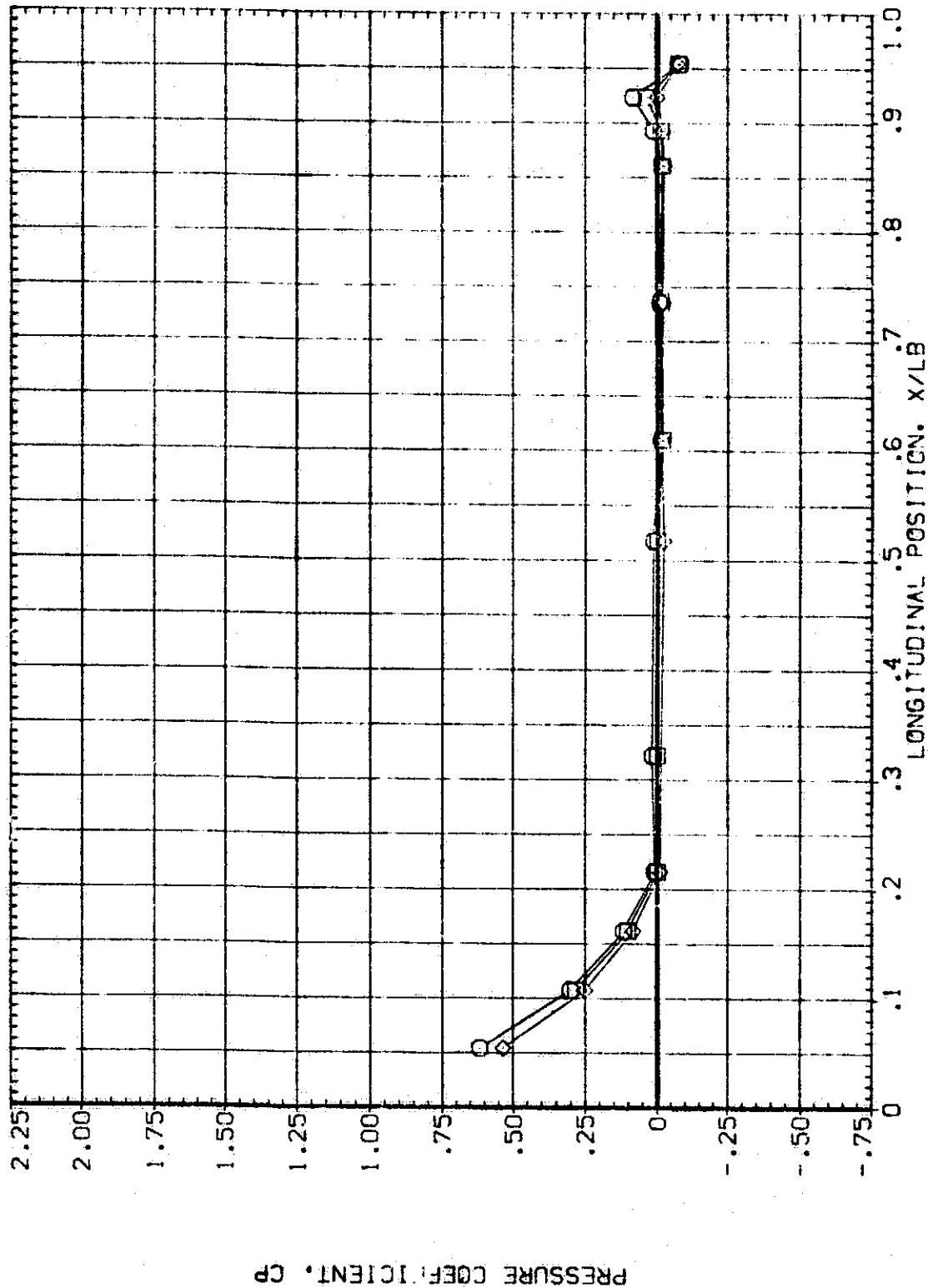


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA002)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 -4.330

MACH  
 3.480

PARAMETRIC VALUES  
 BETA  
 MOUNT  
 .000  
 1.000  
 OFFSET  
 PHI  
 .000  
 .000

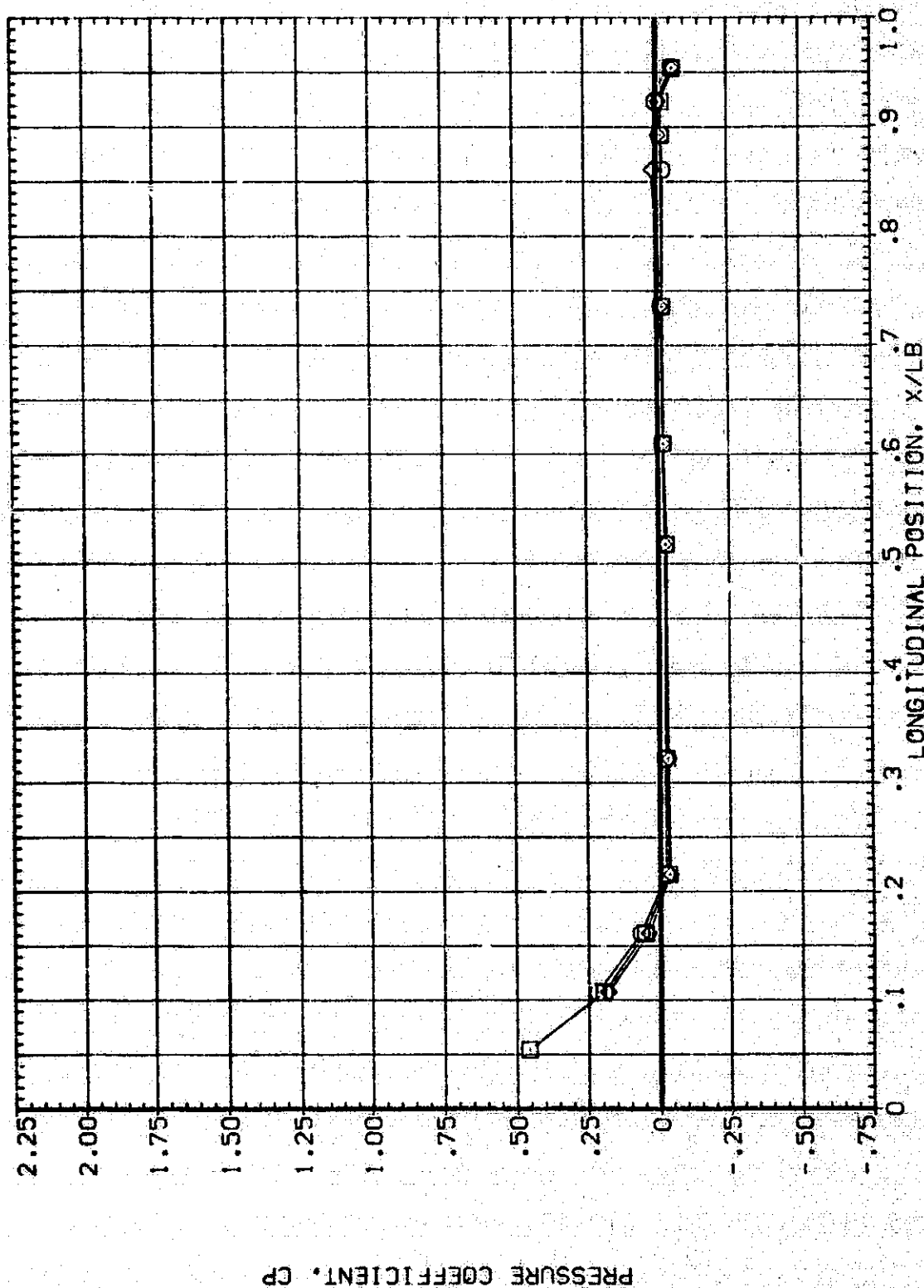


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 180.000  
 232.500  
 225.000

ALPHA  
 -4.330

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 .000 .000  
 1.000 PH1 .000

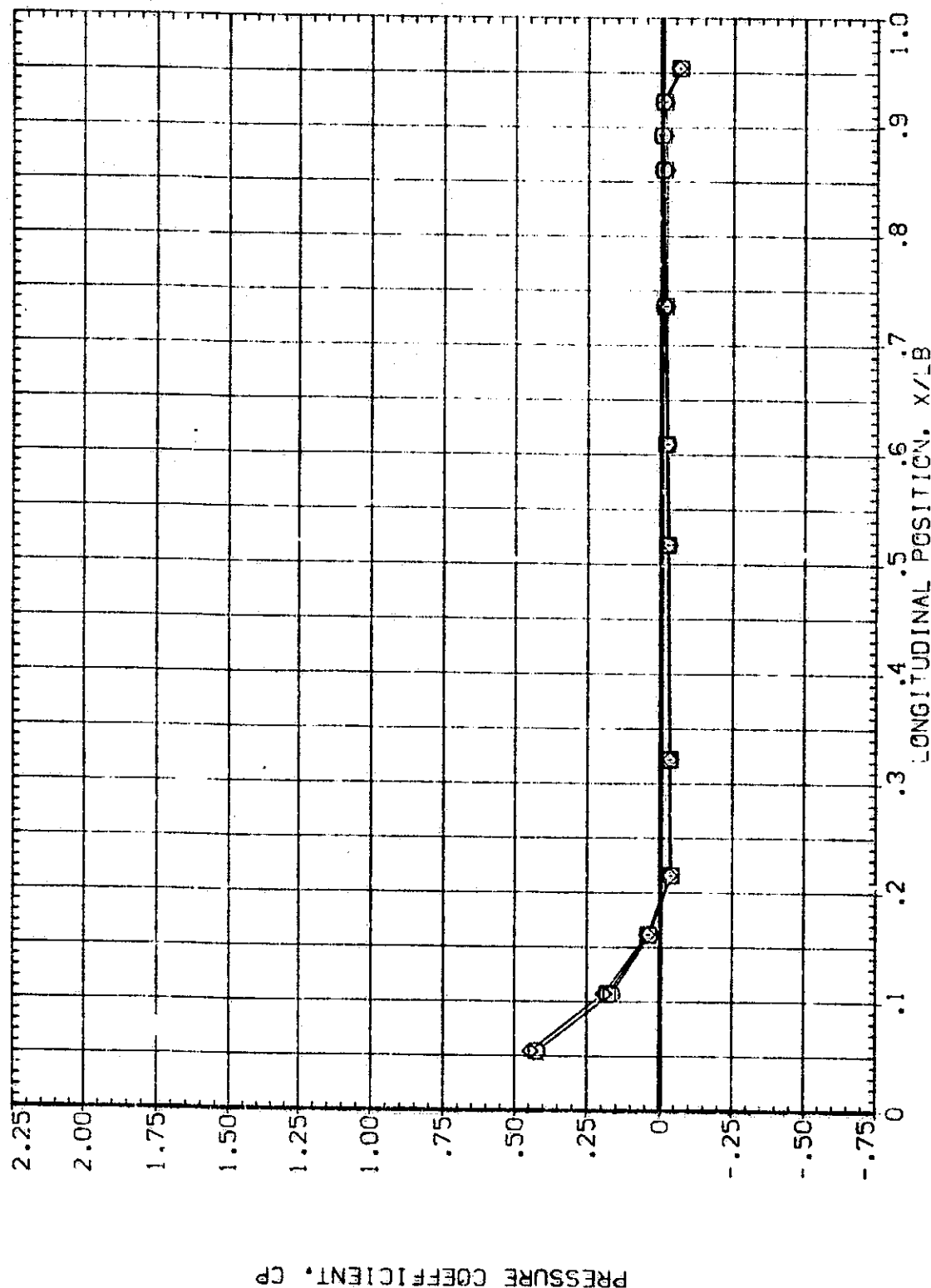


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A002)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 247.500  
 270.000  
 292.500

ALPHA  
 -4.330

MACH  
 3.490

PARAMETRIC VALUES  
 BETA  
 MOUNT  
 .000  
 1.000  
 OFFSET  
 PHI  
 .000  
 .000

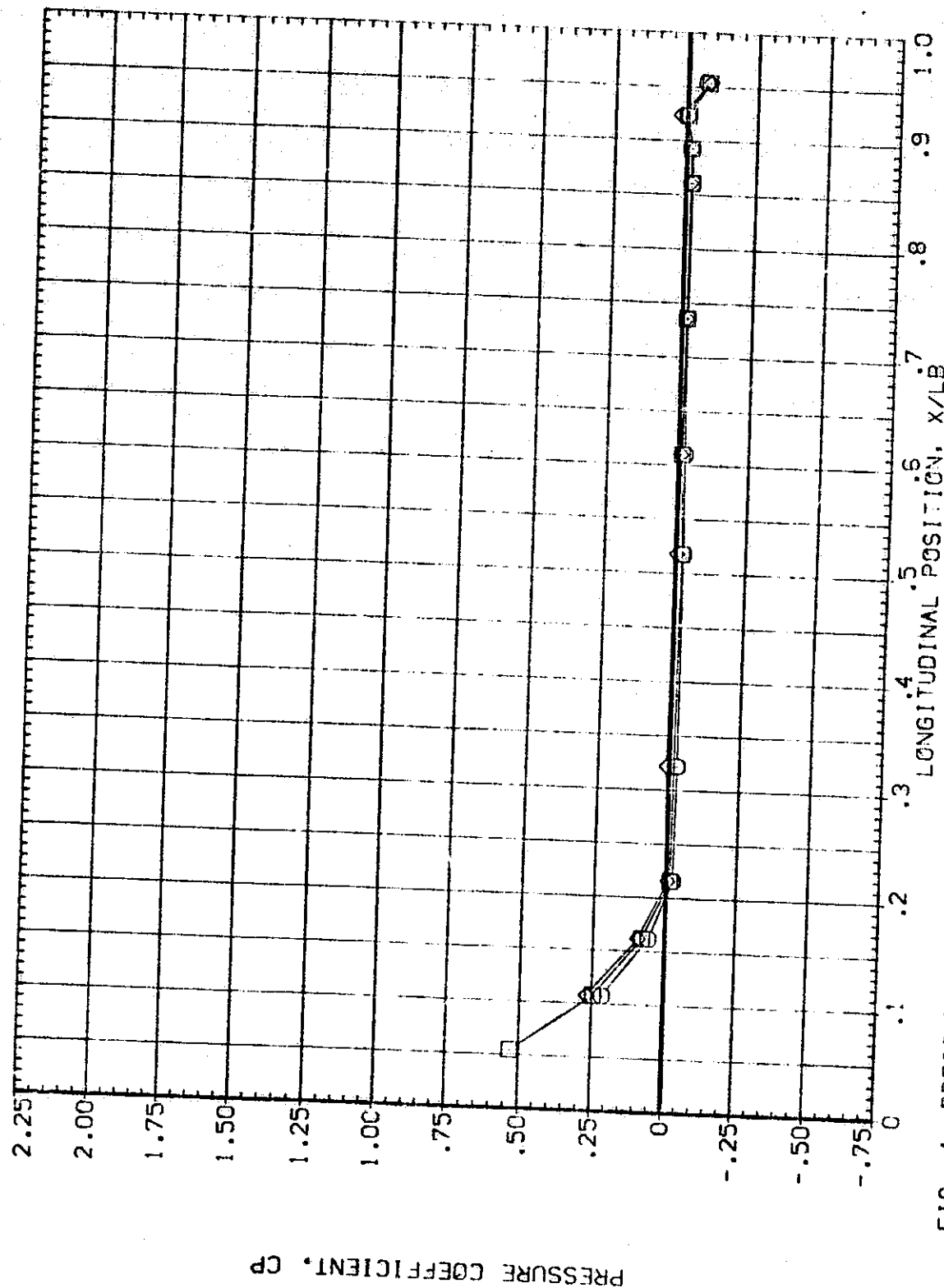


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A002)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	315.000	-4.330	3.480	MDJNT	.000	.000
□	326.000				1.000	
◇	346.000					

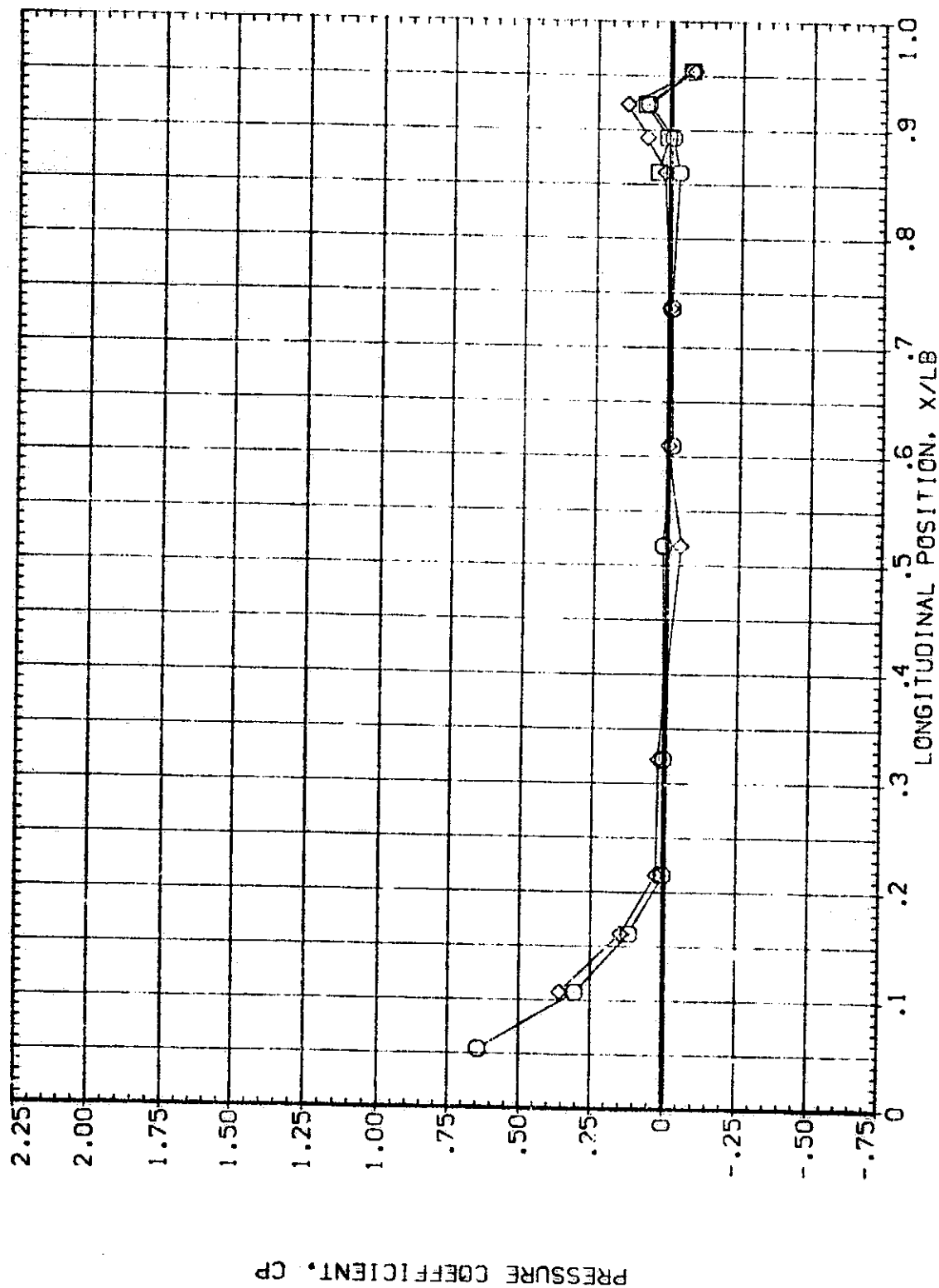


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A003)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
◇	.000	-.280	3.480	.000	.000	.000
□	14.000			1.000		
◇	24.000					

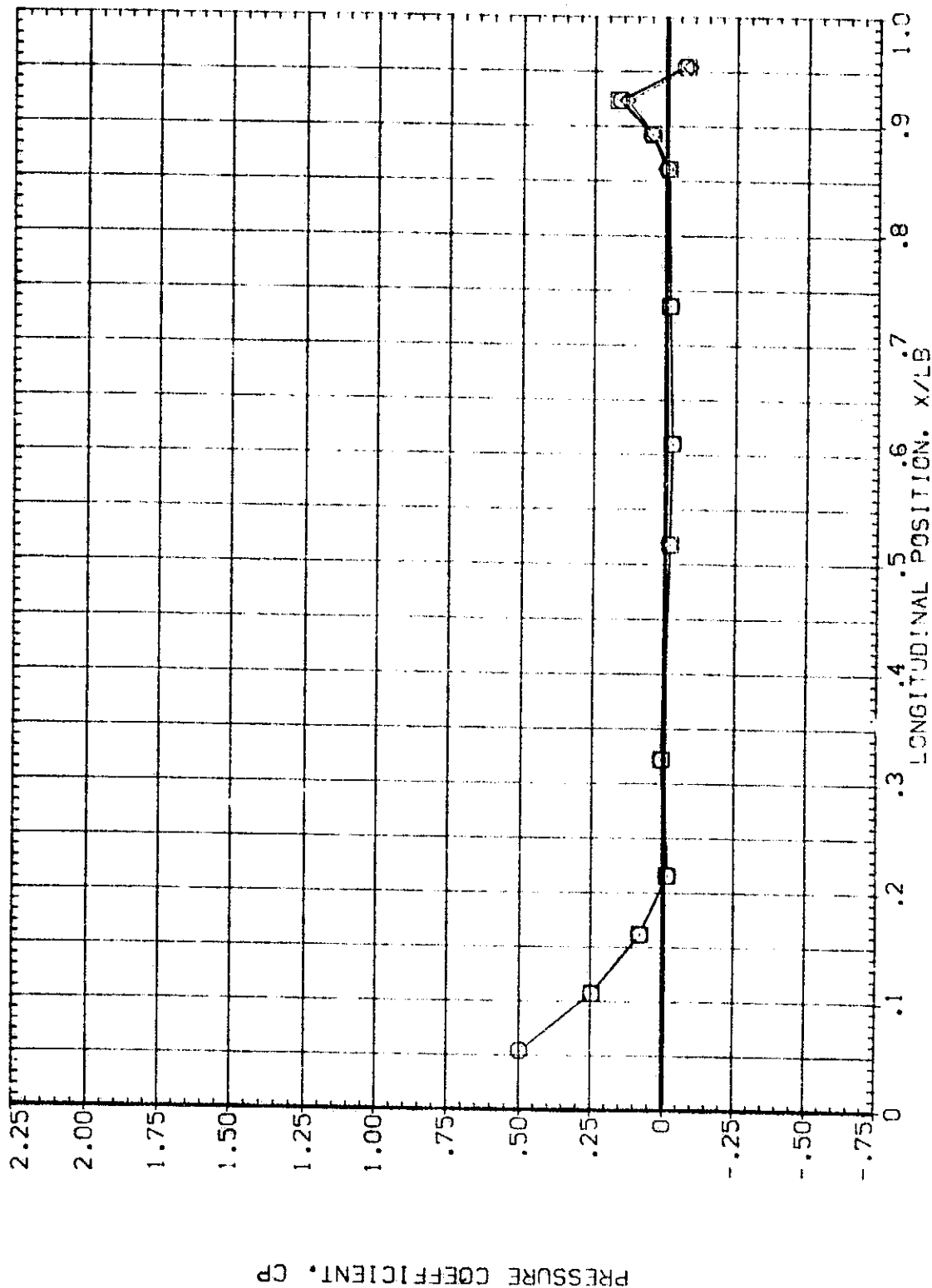


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 □  
 ○  
 ◇

THETA 45.000  
 57.500  
 90.000

ALPHA -.280

MACH 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 .000  
 PH1

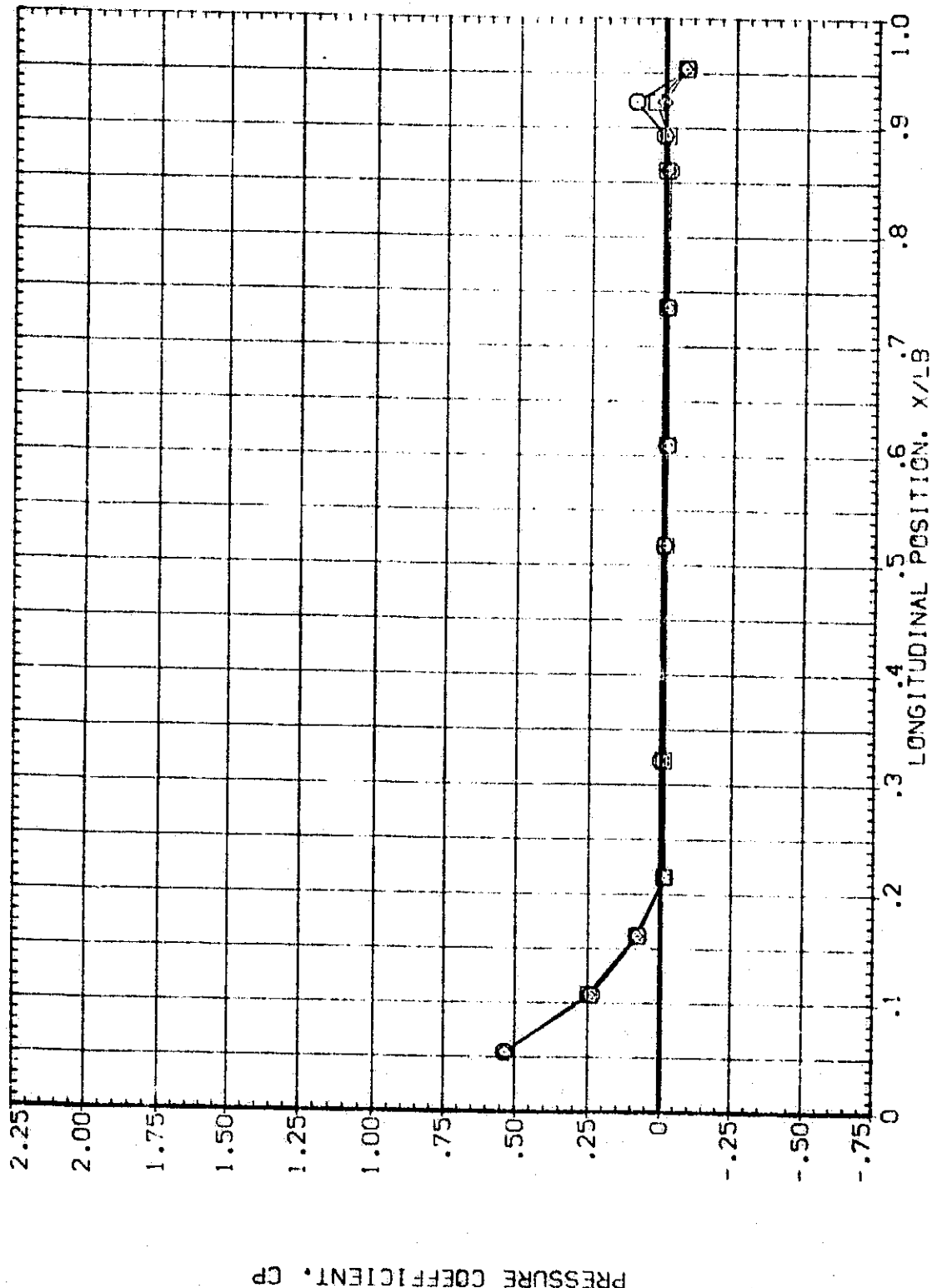


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (P1A003)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	112.500	-.280	3.480	.000	.000	.000
◇	135.000			1.000		
◇	157.500					

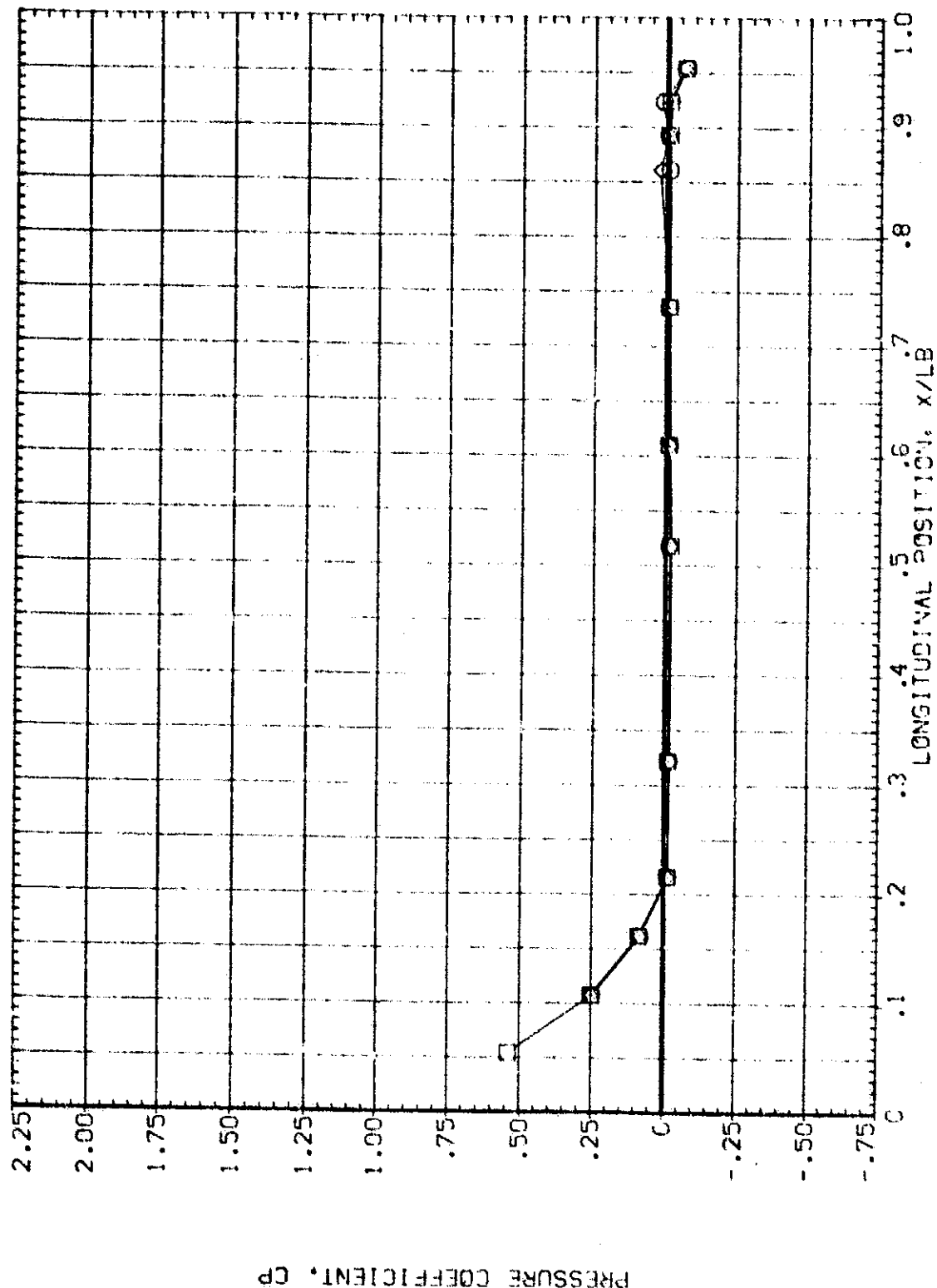


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A003)

SYMBOL	PARAMETRIC VALUES		
	BETA	OFFSET	PHI
180.000	MINISET	.000	.000
232.500		1.000	
225.000			

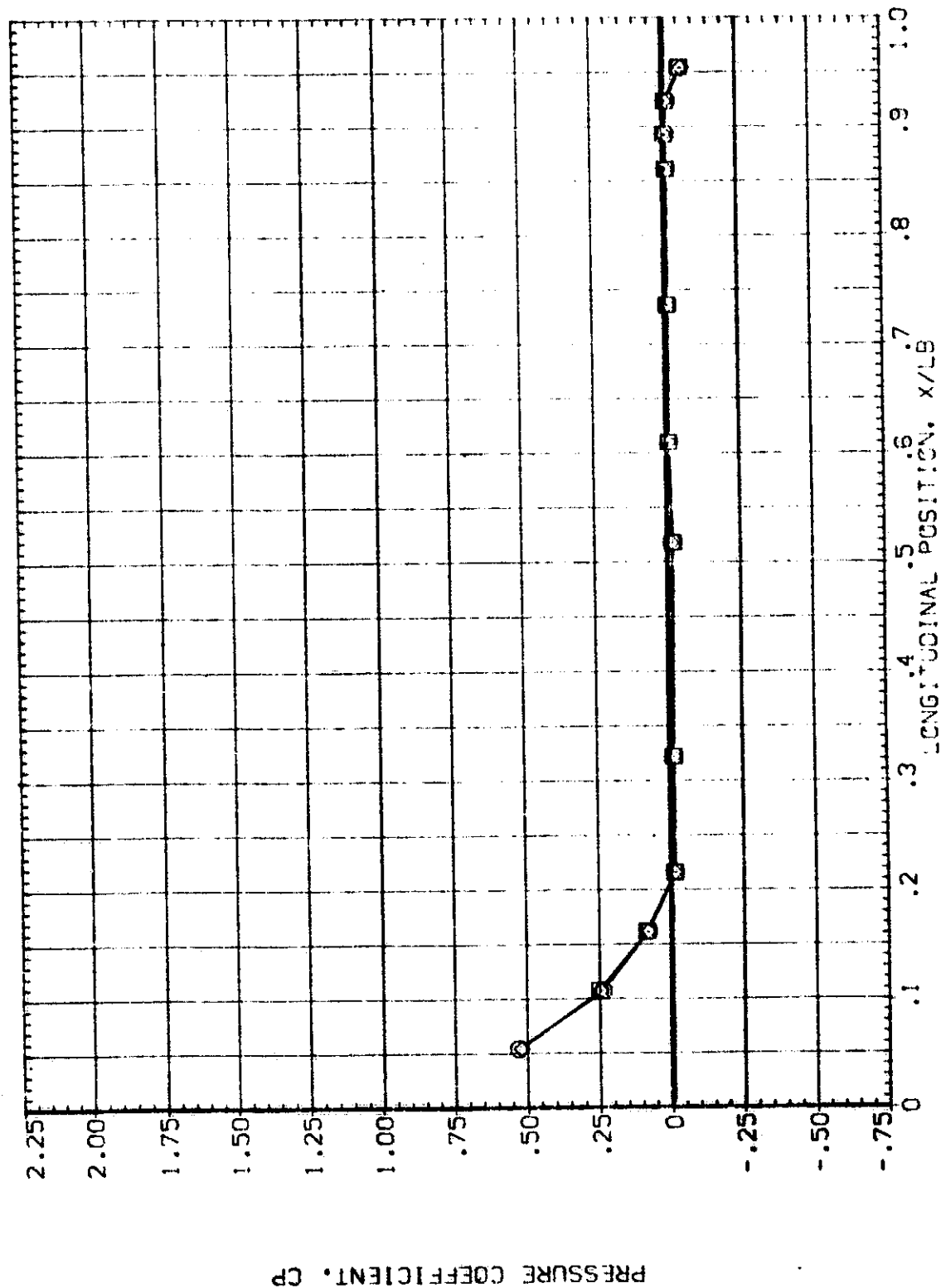


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-21) MCR0200 EXTERNAL TANK, T1 (PIA003)

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES	
					1.000	OFFSET
□	247.500	-.280	3.480	MOUNT	.000	.000
◇	270.000					
◇	292.500					

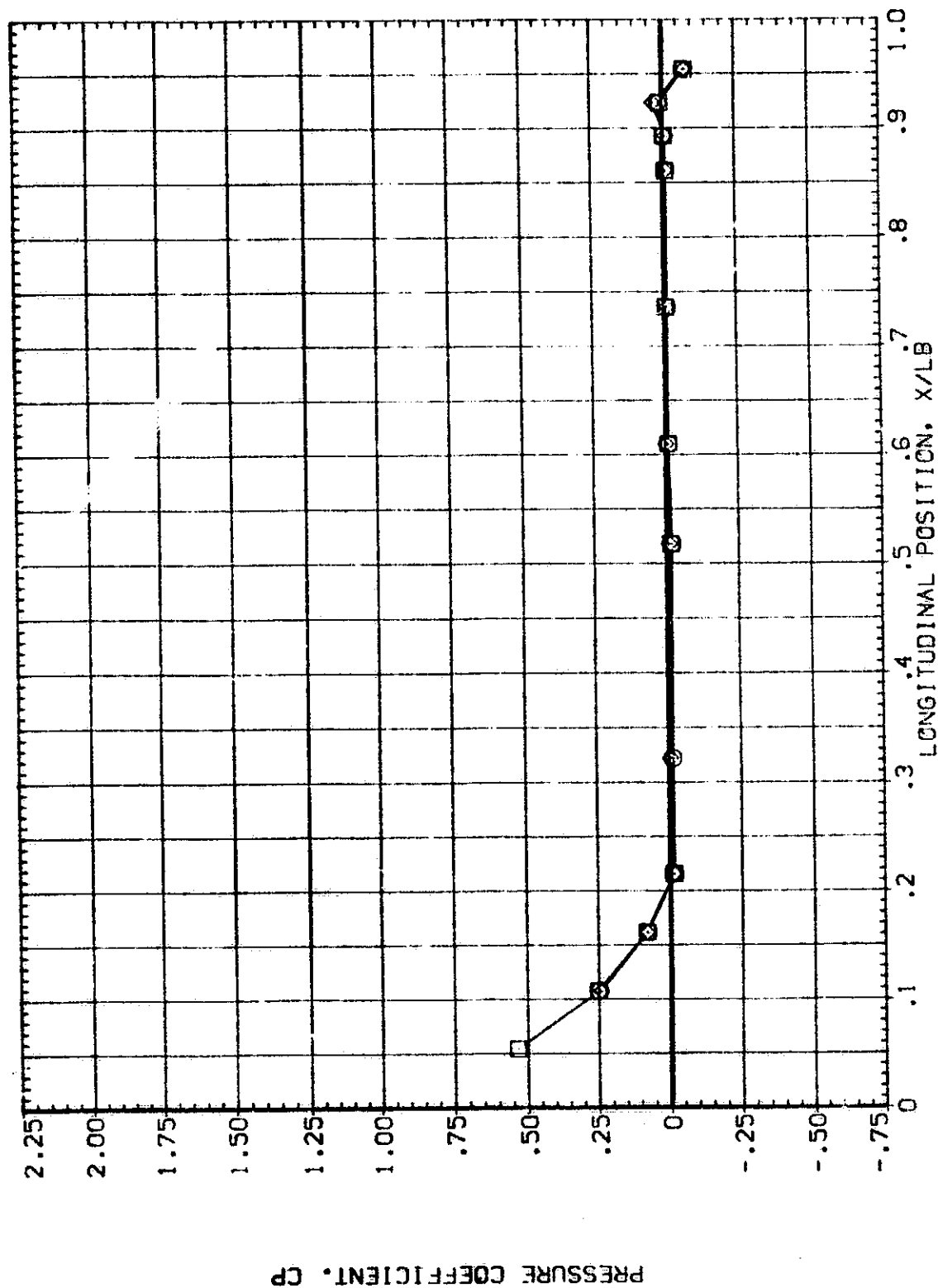


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA003)

SYMBOL	THETA		ALPHA		MACH		BETA		PARAMETRIC VALUES	
	315.000	326.000	346.000	-.280	3.480		MOUNT		.000	OFFSET
○									1.000	PHI
□									.000	
◇									.000	

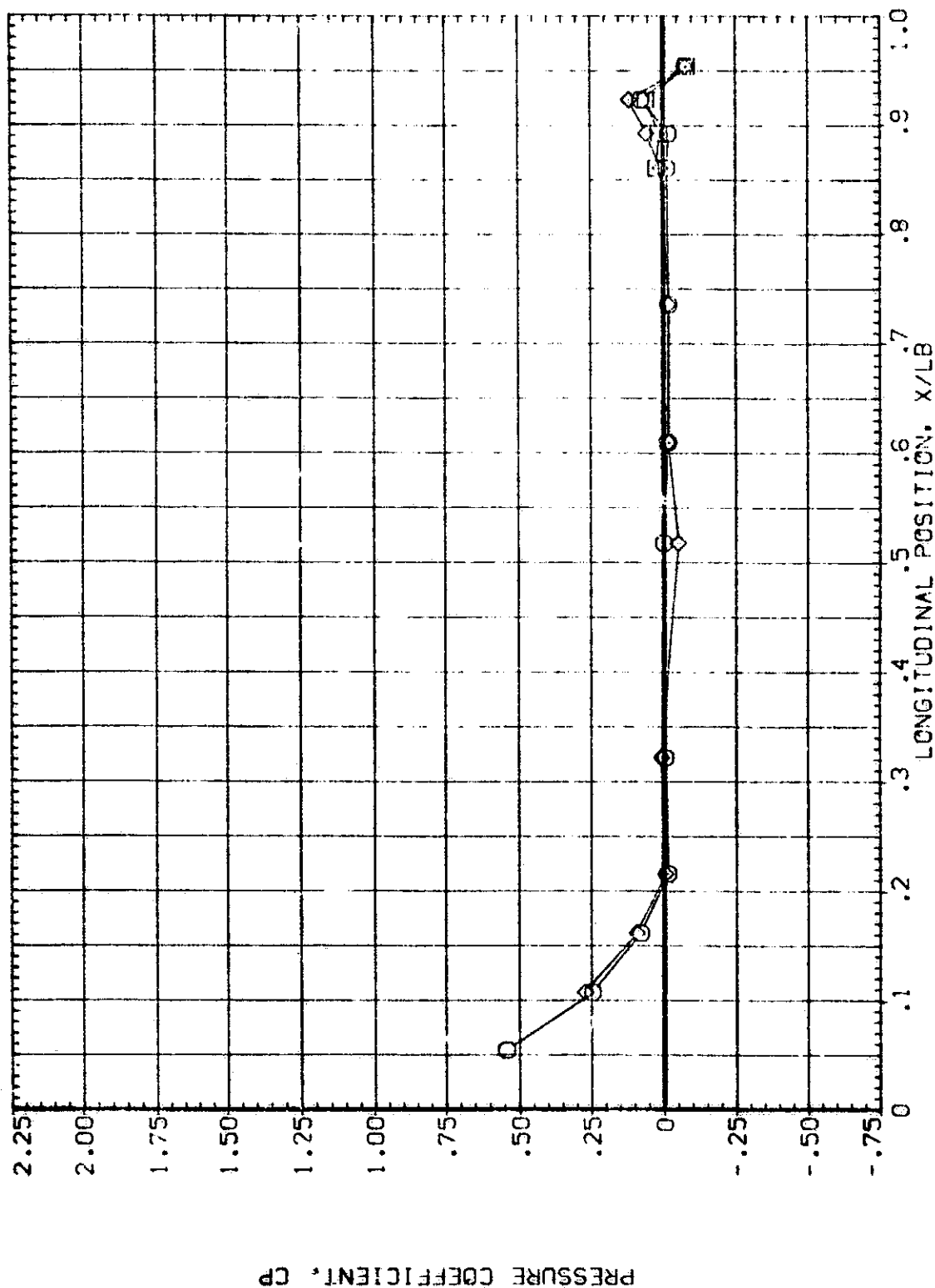


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A004)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	.000	3.770	3.480	.000	.000	.000
□	14.000			1.000		
◇	24.000					

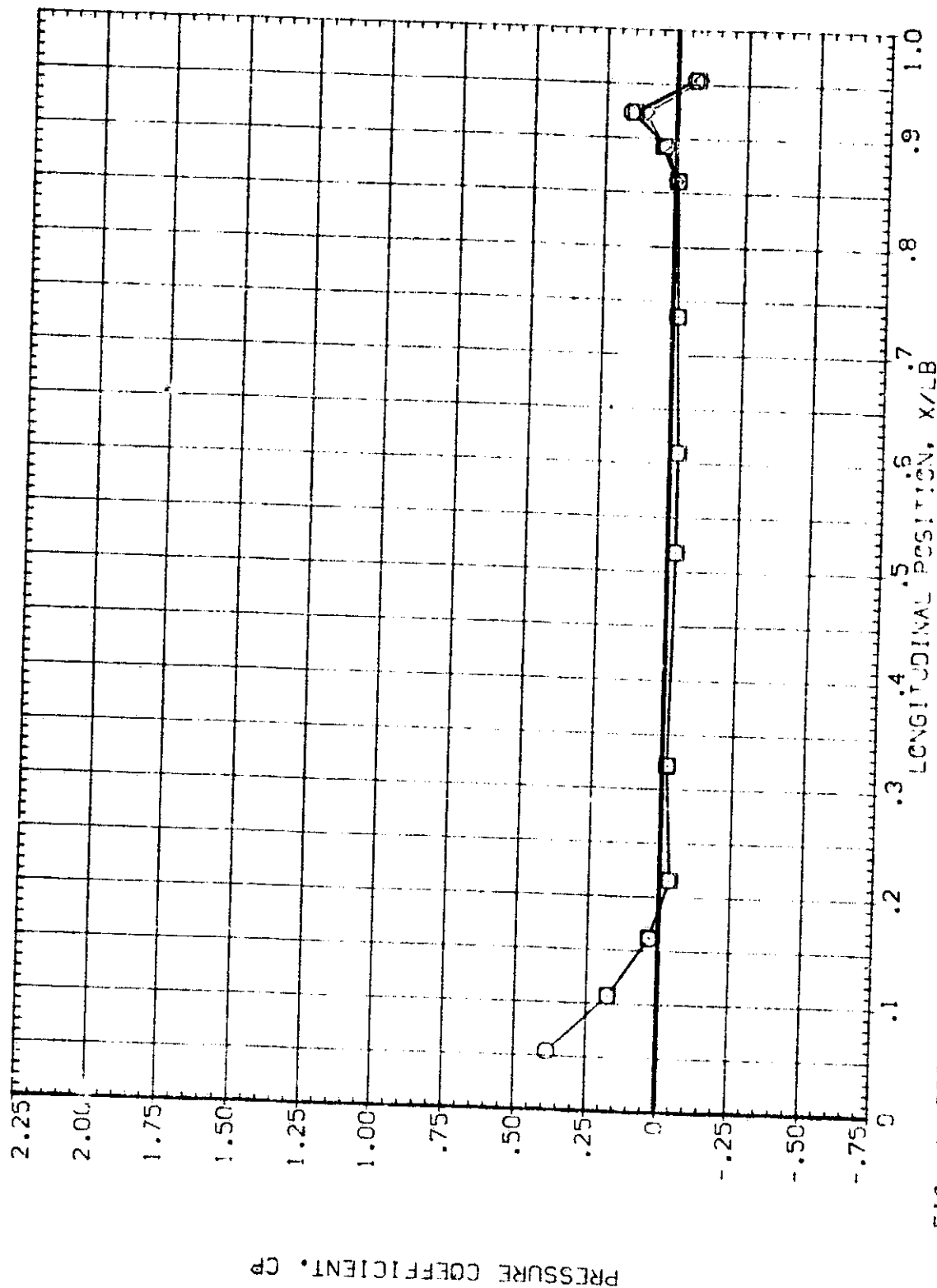


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A0004)

SYMBOL

45.000  
57.500  
90.000

THETA  
3.770

ALPHA  
3.480

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000  
PHI

.000  
.000

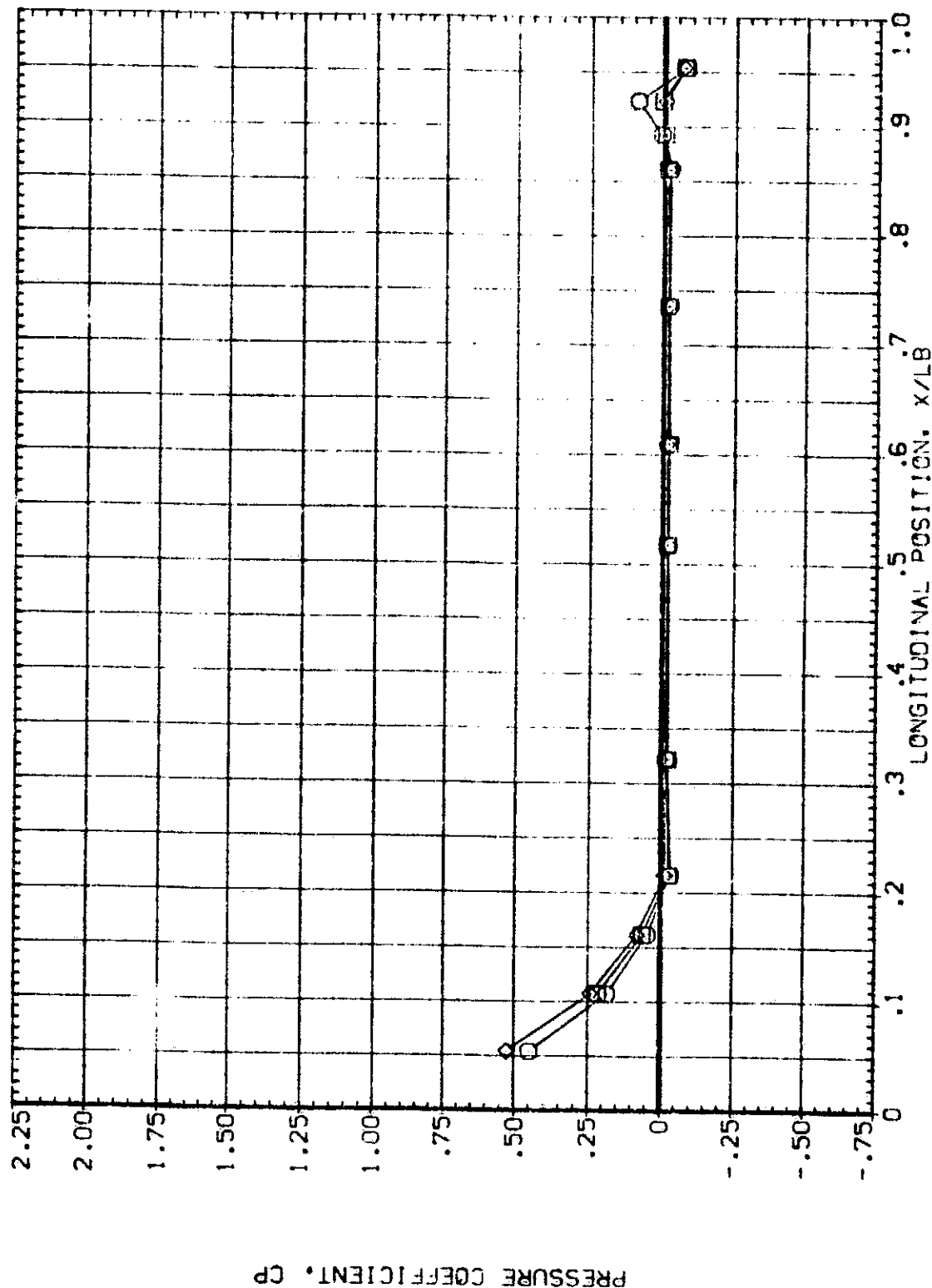


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A004)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 3.770

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000

OFFSET  
 PHI

.000  
 .000

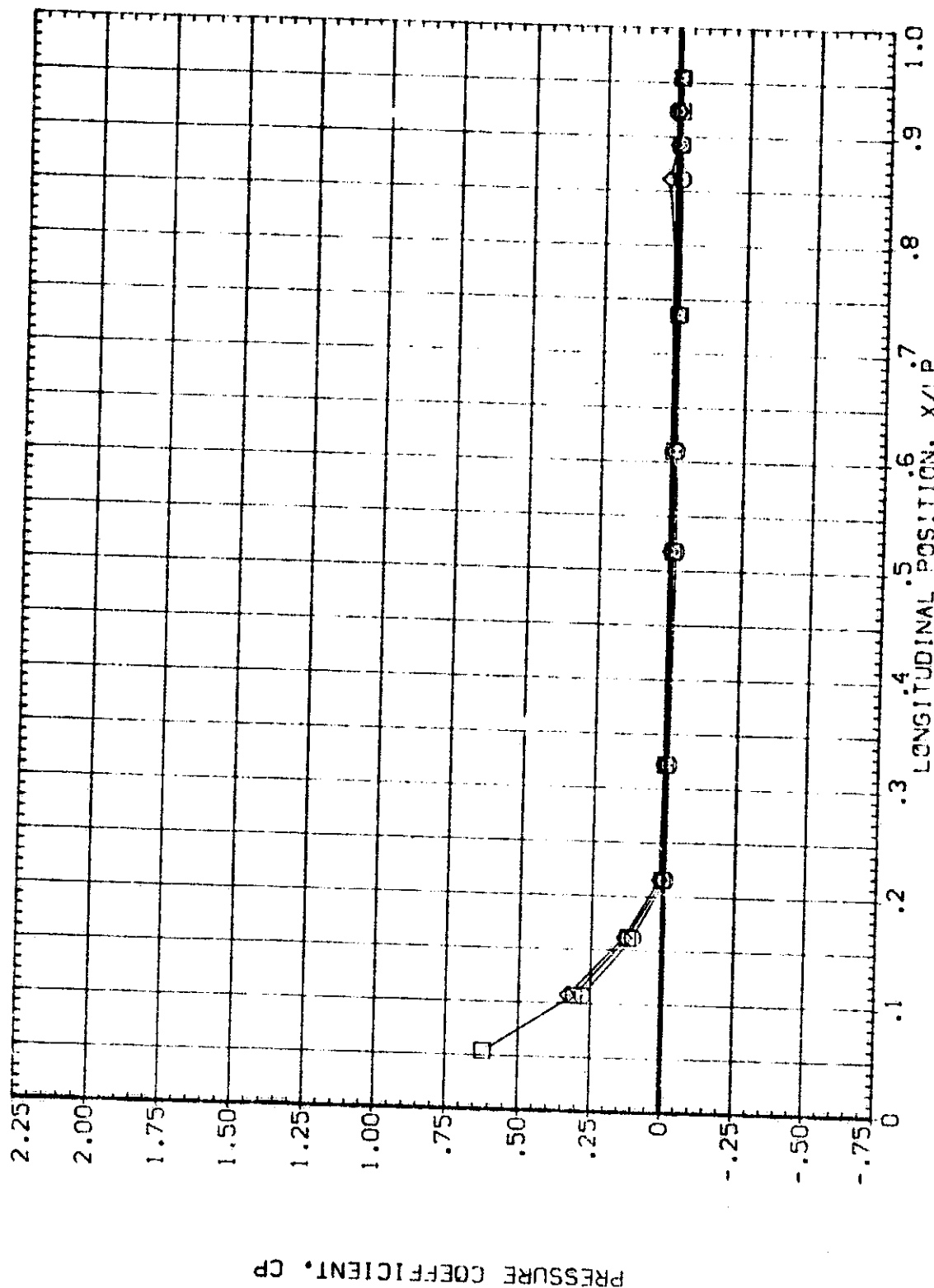


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 □  
 ◇

THETA  
 180.000  
 232.900  
 225.000

ALPHA  
 3.770

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 .000 .000  
 1.000 PH1 .000

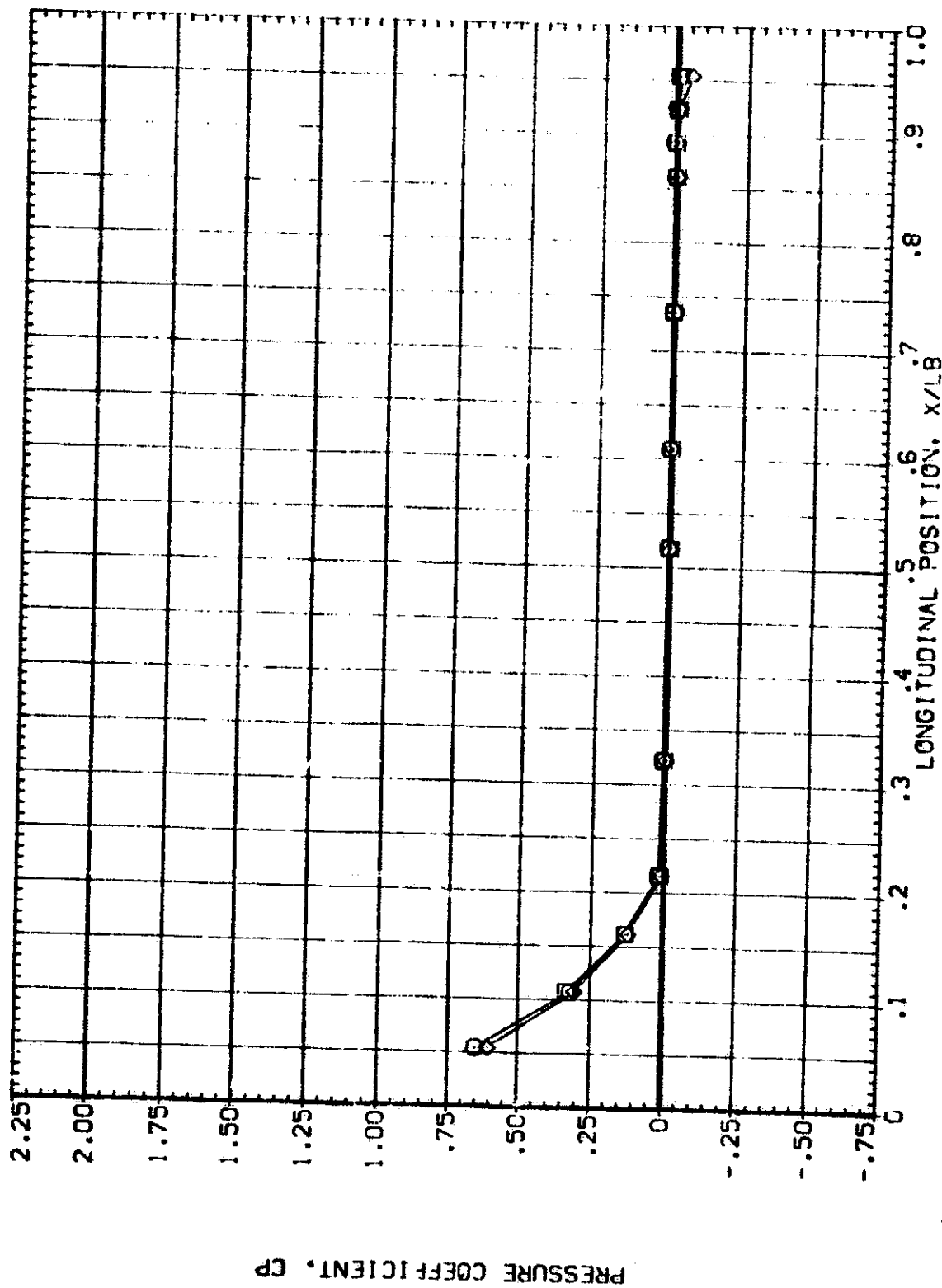


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIAOC4)

SYMBOL THETA ALPHA MACH  
 □ 247.500 3.770 3.480  
 ◇ 270.000  
 ◇ 292.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI .000

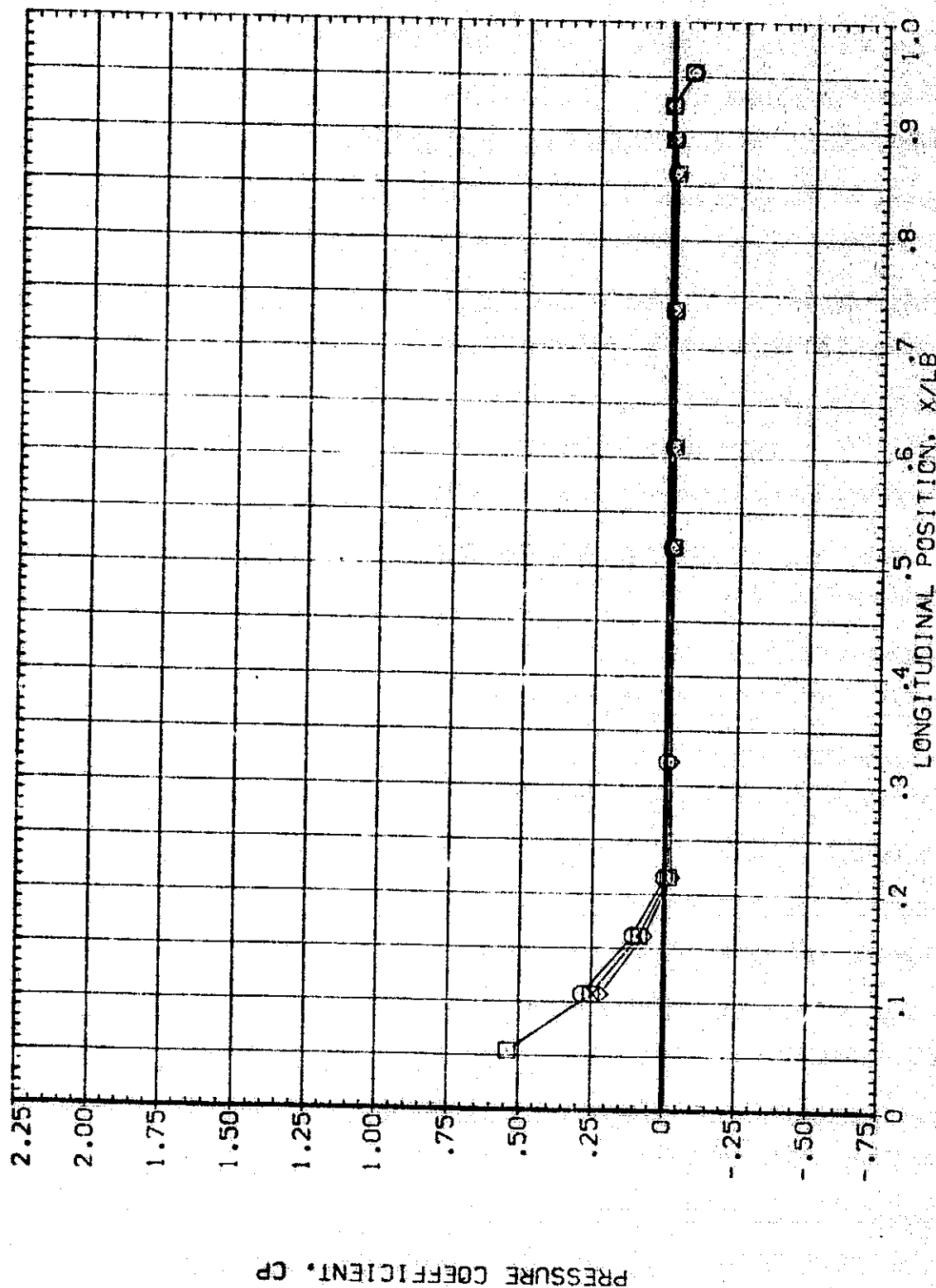


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA004)

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
3.770  
MACH  
5.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000 .000  
1.000 1.000  
PHI .000 .000

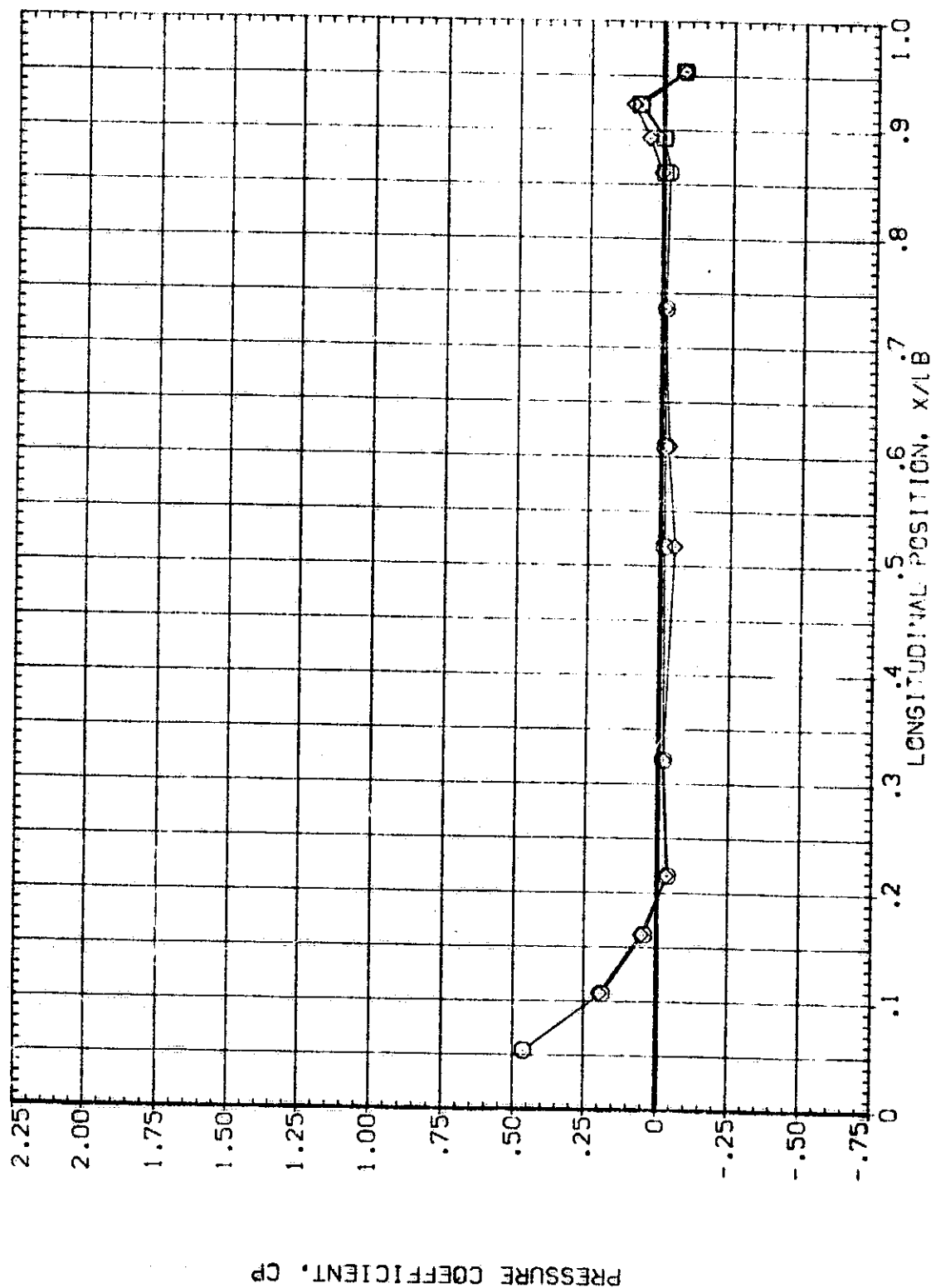


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA005)

SYMBOL  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 7.800

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 .000  
 PH:

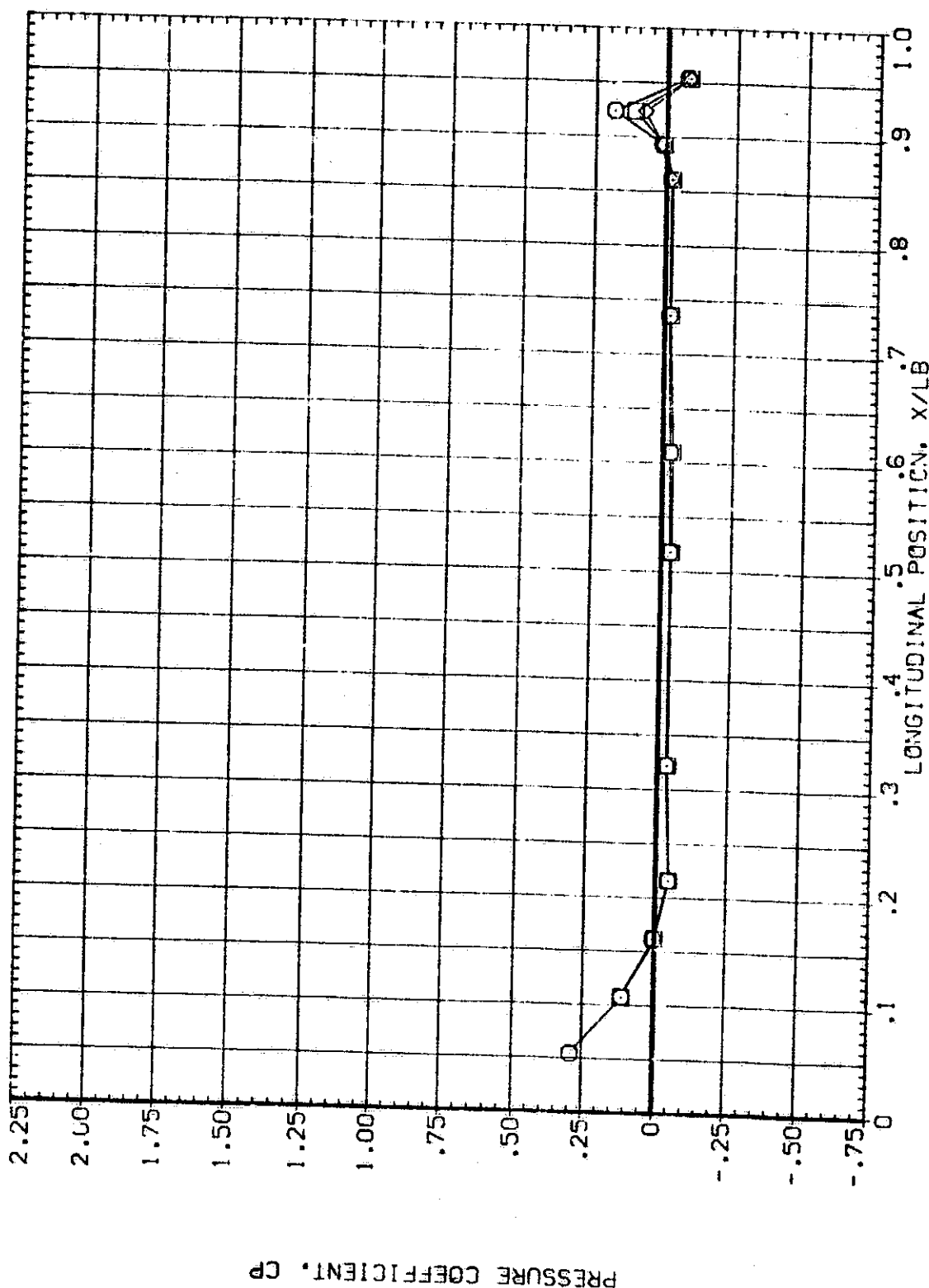


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

SYMBOL  
 ◇  
 □  
 ○

THETA 45.000  
 57.500  
 90.000

ALPHA 7.800

MACH 3.480

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI .000

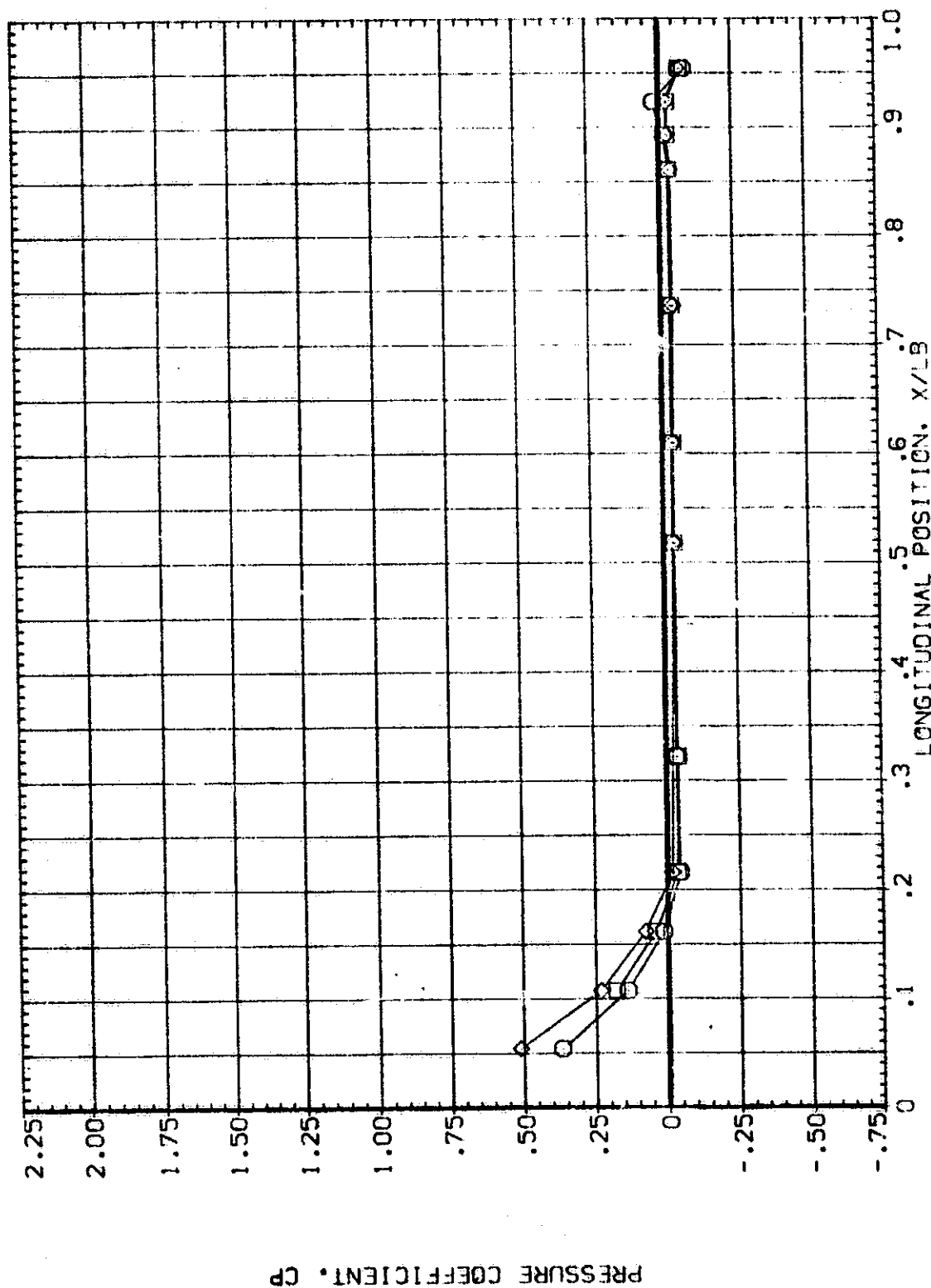


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA005)

SYMBOL  
□  
○  
◇

THETA  
112.500  
135.000  
157.500

ALPHA  
7.800

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI

.000  
.000

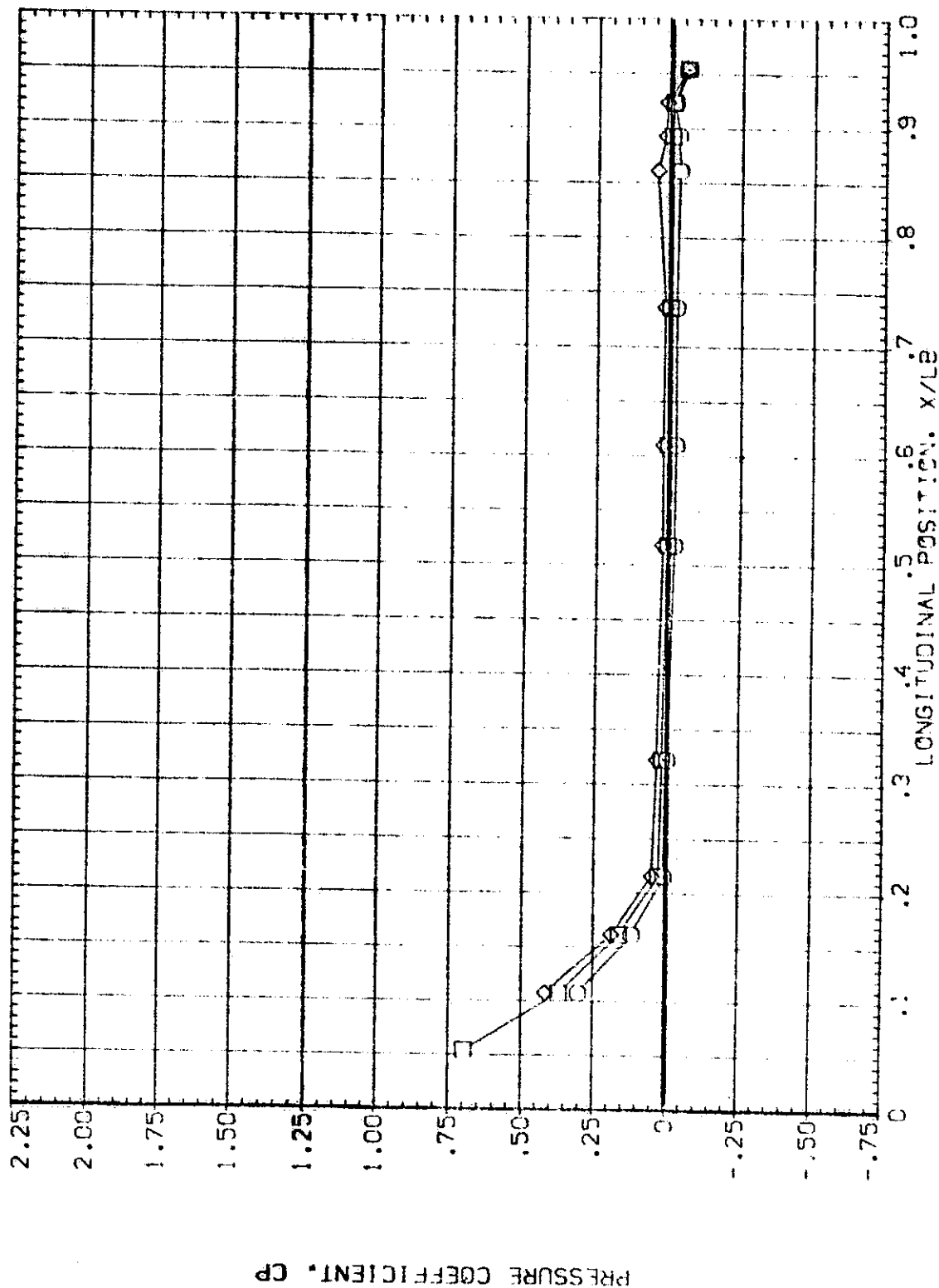


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 190.000 7.800 3.480  
 232.500  
 225.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI .000

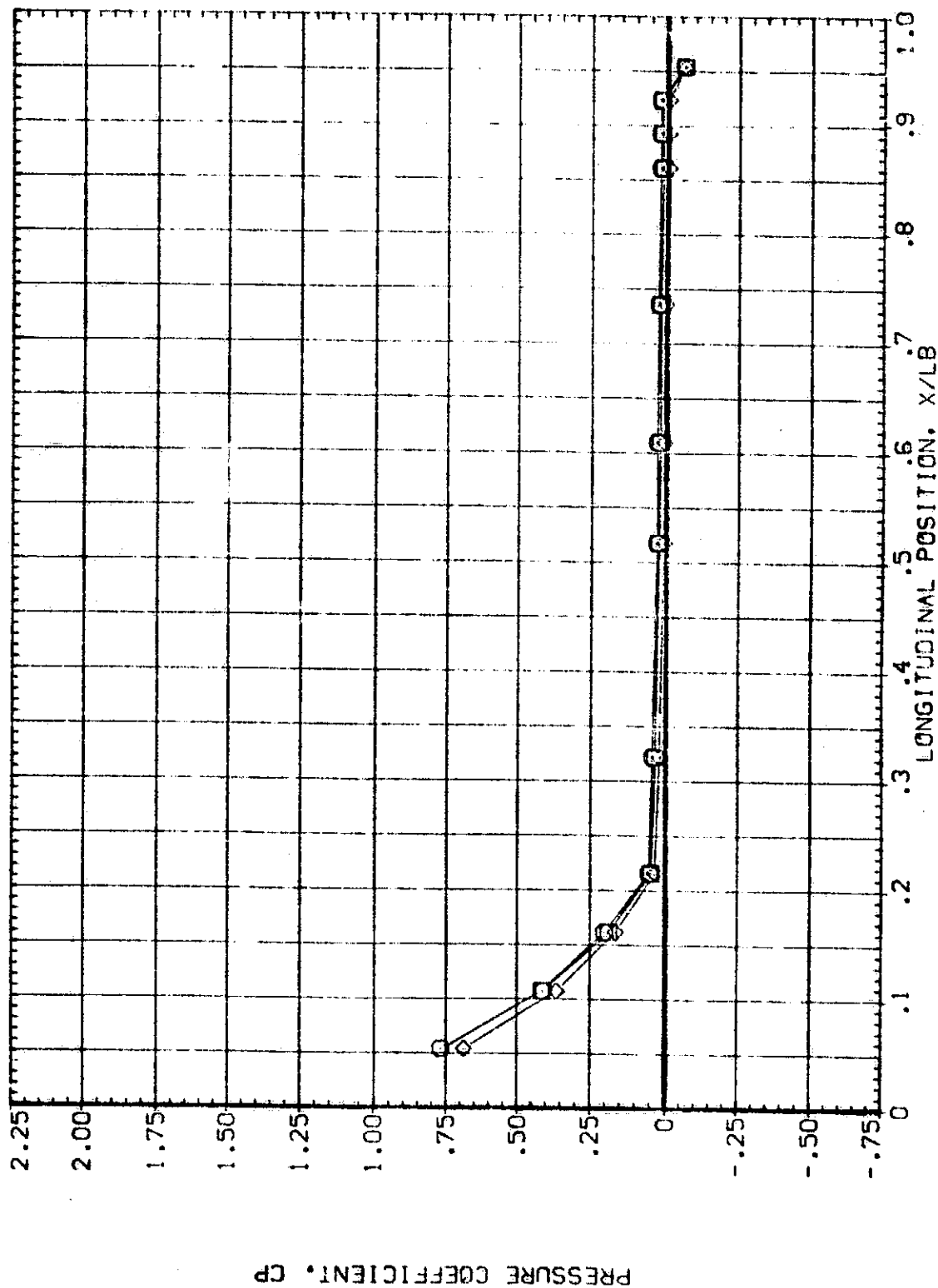


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA005)

SYMBOL THETA ALPHA MACH  
 □ 247.500 7.800 3.480  
 □ 270.000  
 ◇ 292.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI  
 .000 .000

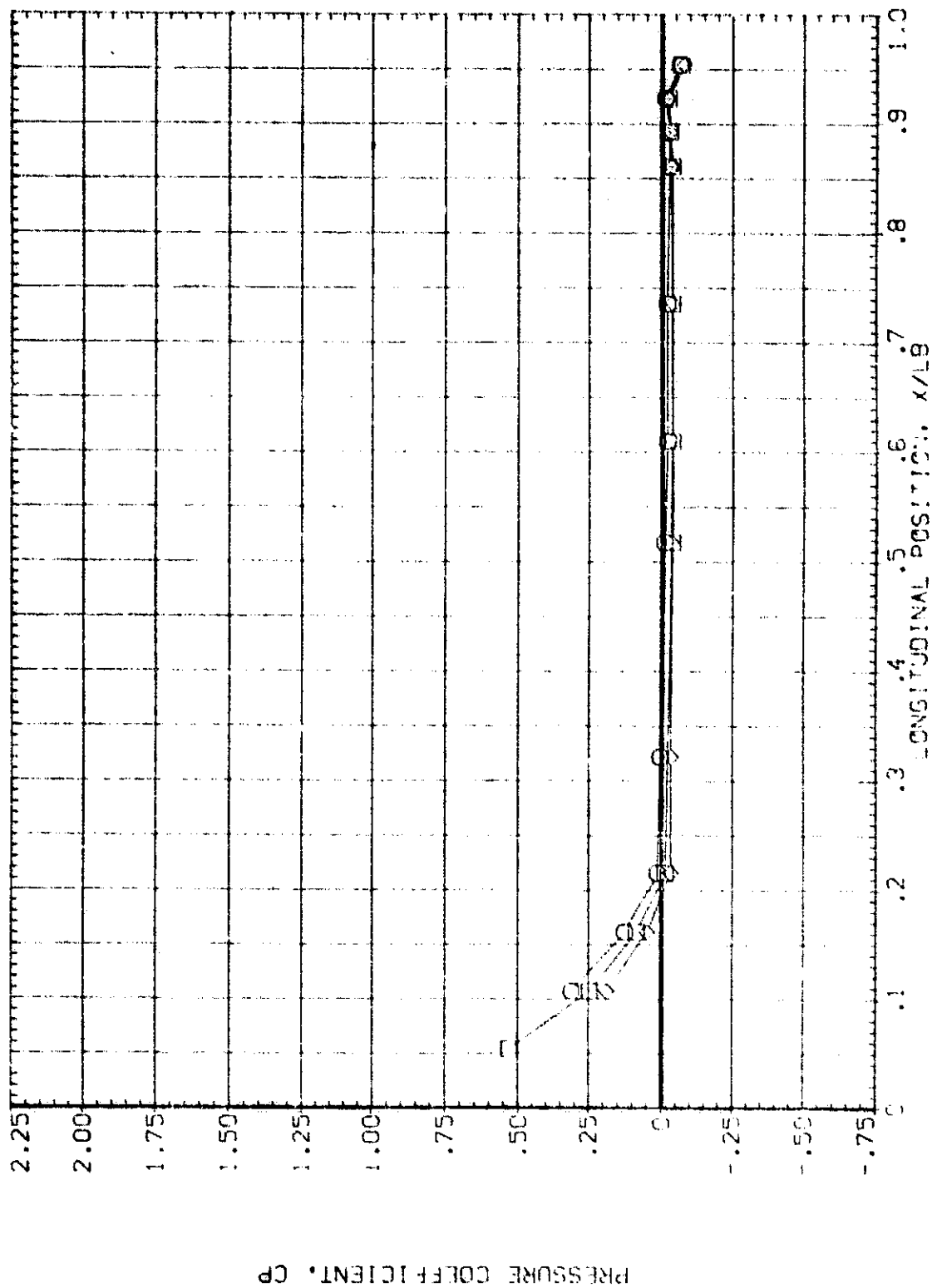


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTOBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
□	315.000	7.800	3.480	BETA	.000	OFFSET
◇	326.000			MDUNT	1.000	PHI
	346.000					

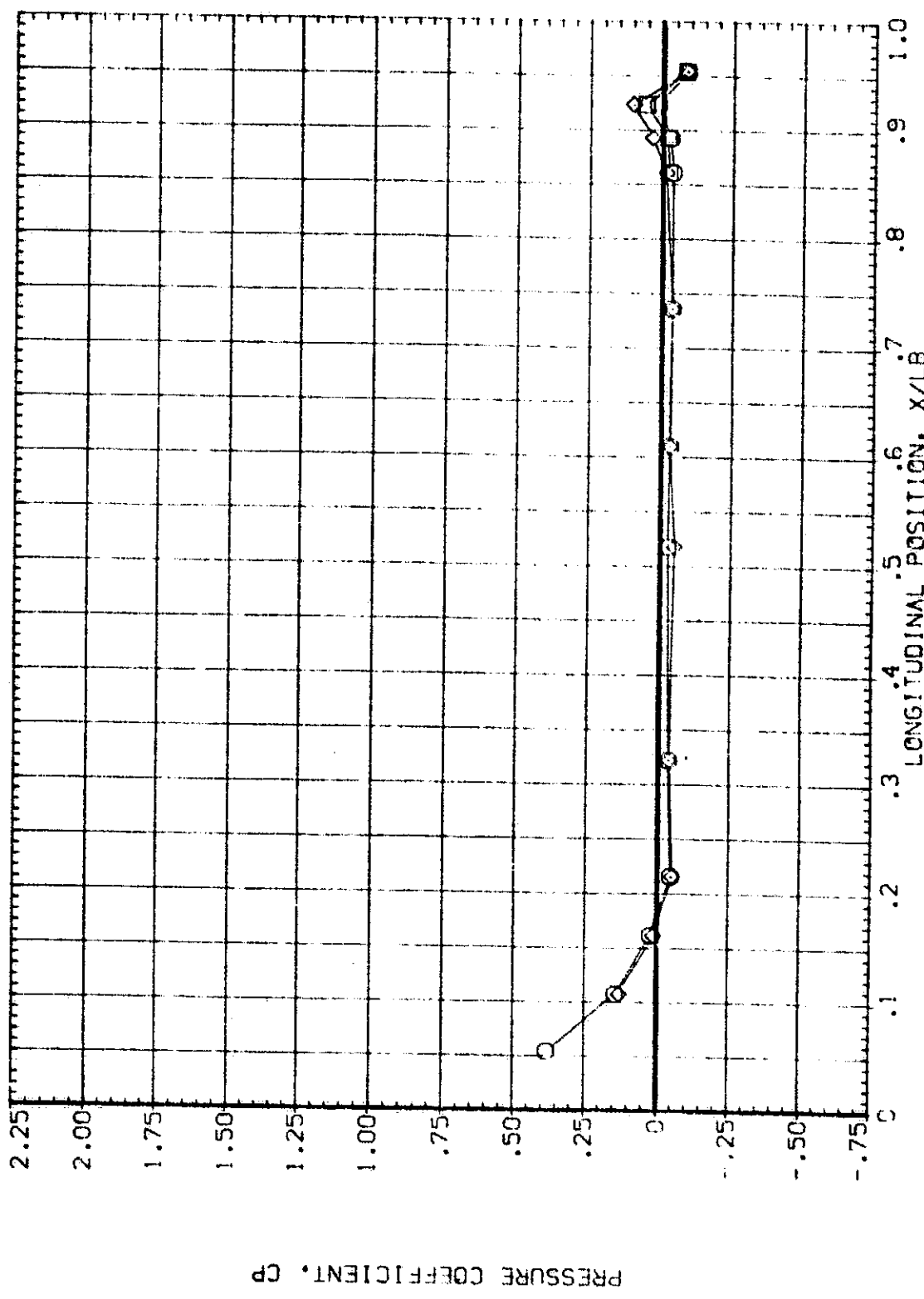


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA006)

SYMBOL  
 □  
 ○  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 12.520

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 PHI

20.000  
 .000

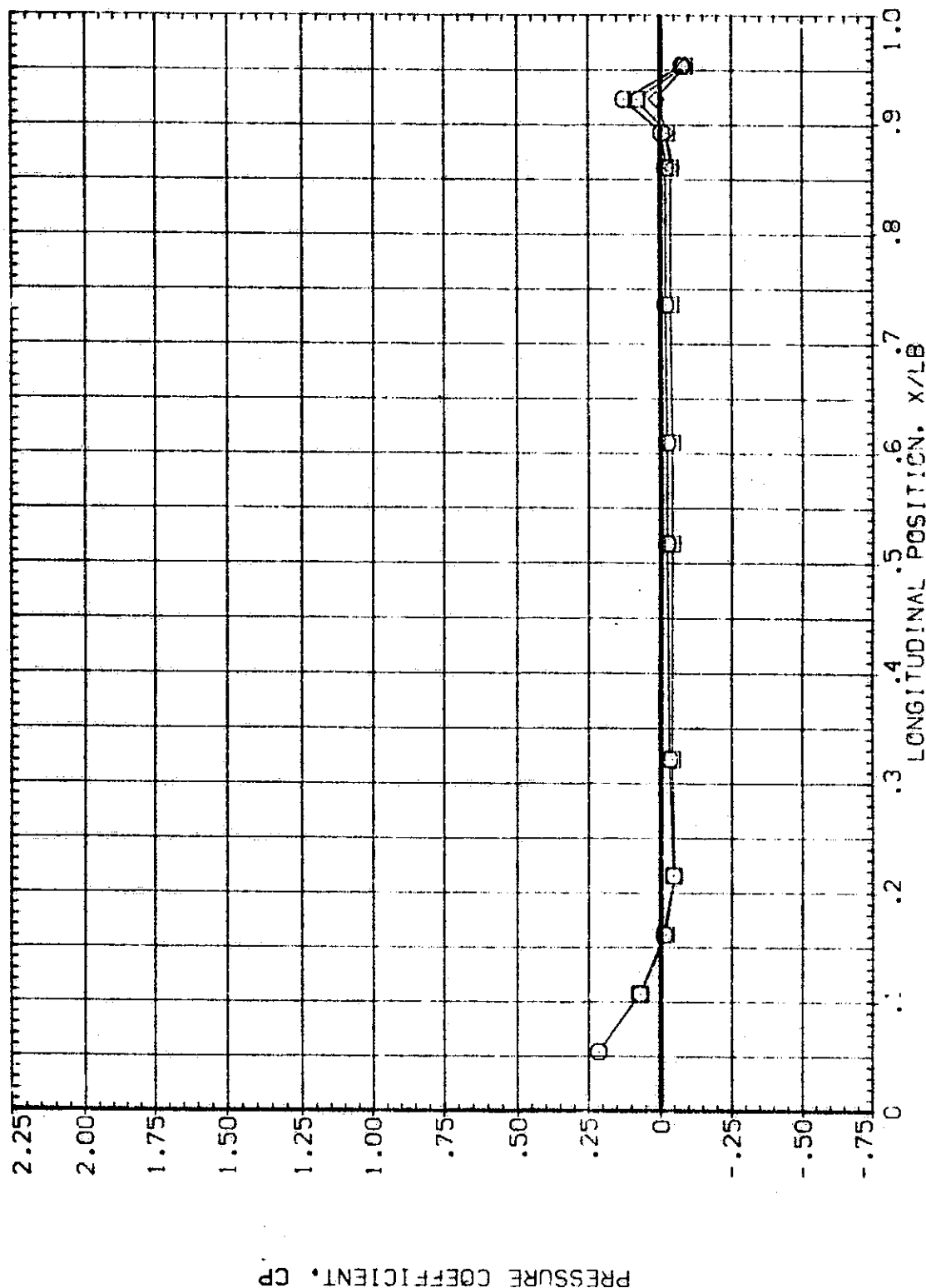


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

SYMBOL  
 45.000  
 87.500  
 90.000

THETA  
 45.000  
 87.500  
 90.000

ALPHA  
 12.520  
 3.480

MACH  
 3.480

PARAMETRIC VALUES  
 .000 .000  
 .000 .000  
 .000 .000

BETA  
 HOUNT

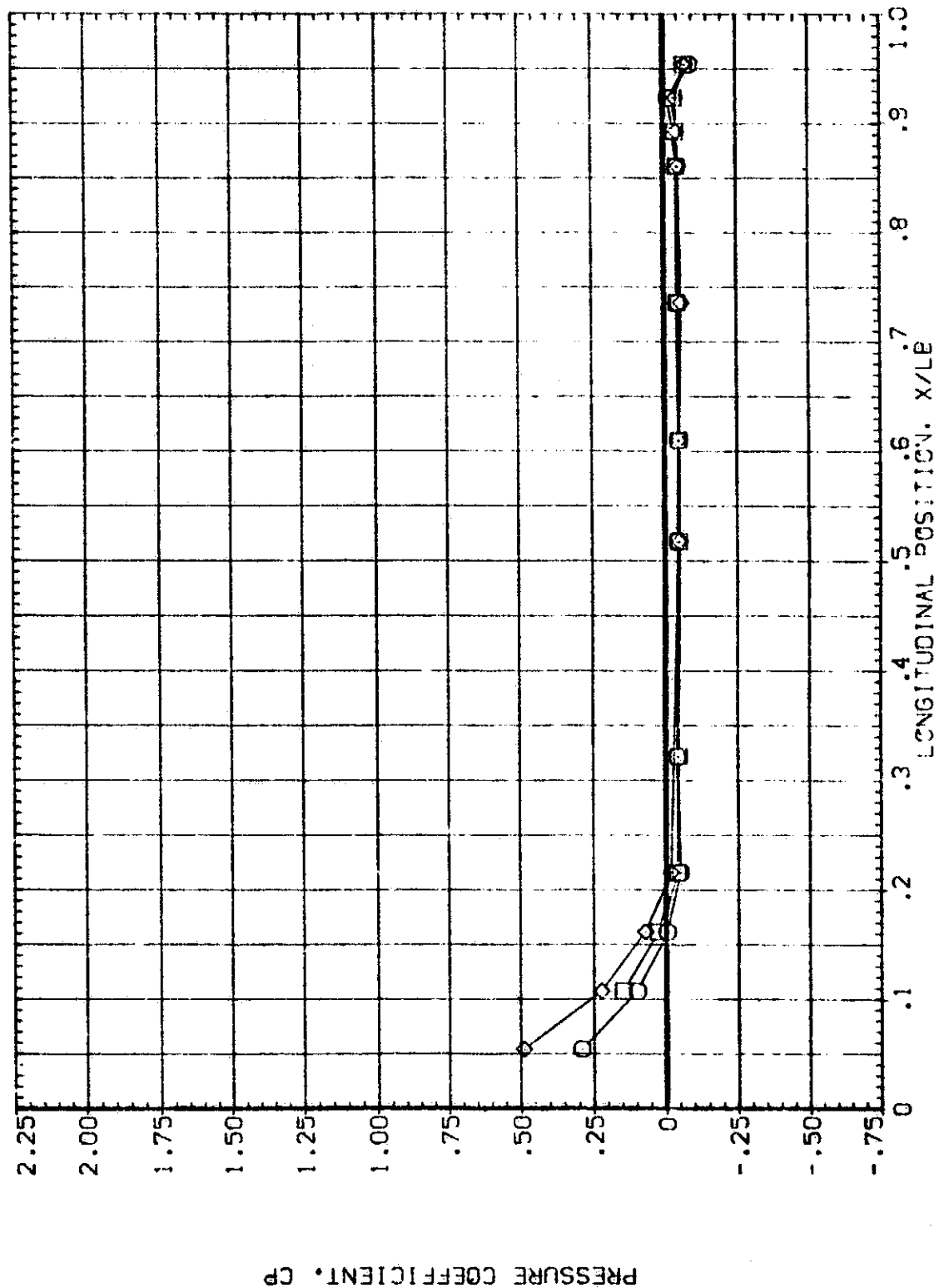


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL

THETA  
112.500  
135.000  
157.500

ALPHA  
12.520

MACH  
3.480

(P1A00E)

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

20.000  
.000

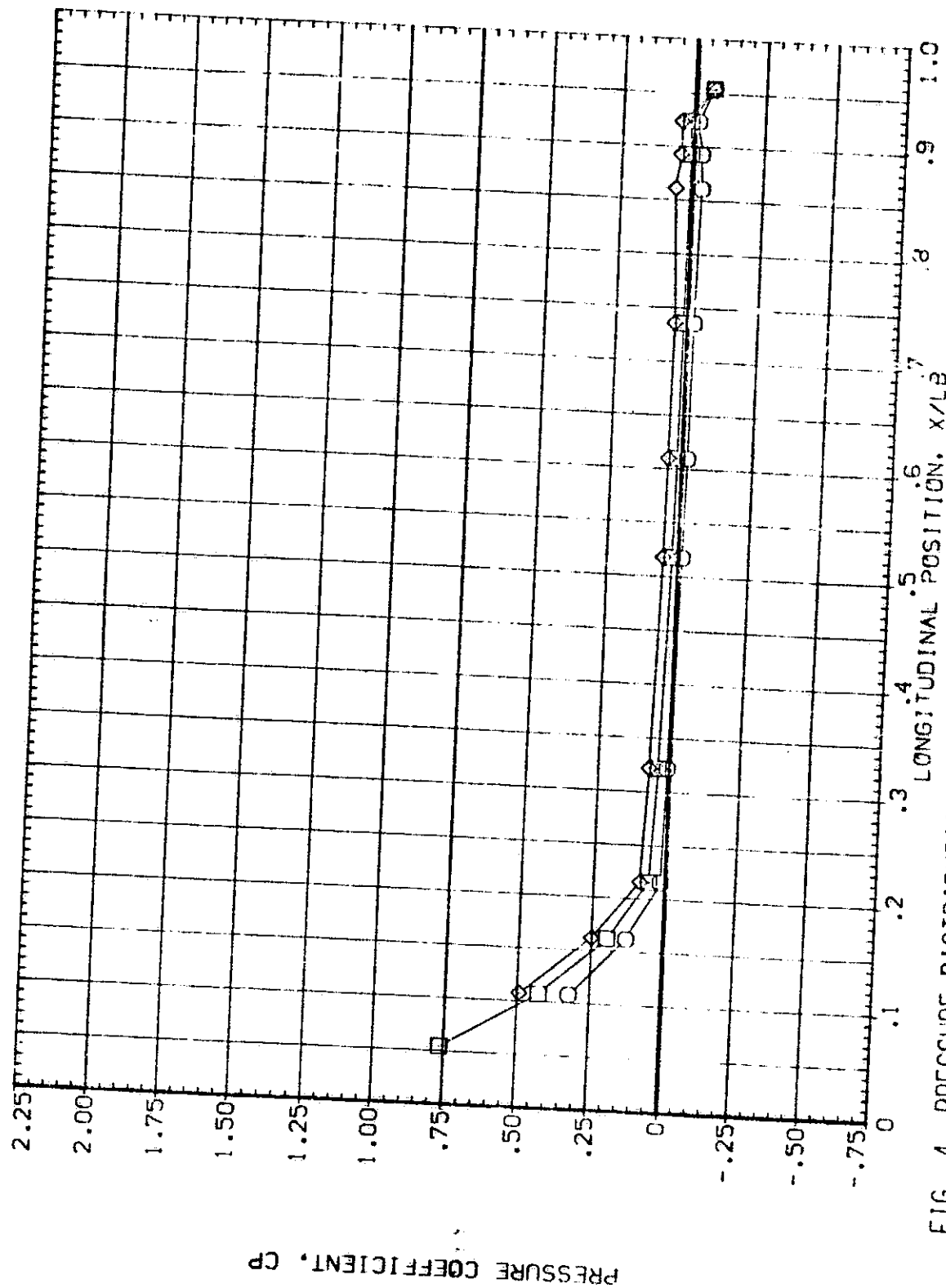


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA006)

SYMBOL    THETA    ALPHA    MACH  
 ○    190.000    12.520    3.480  
 □    232.500  
 ◇    225.000

PARAMETRIC VALUES  
 BETA    .000    OFFSET    20.000  
 MOUNT    1.000    PHI    .000

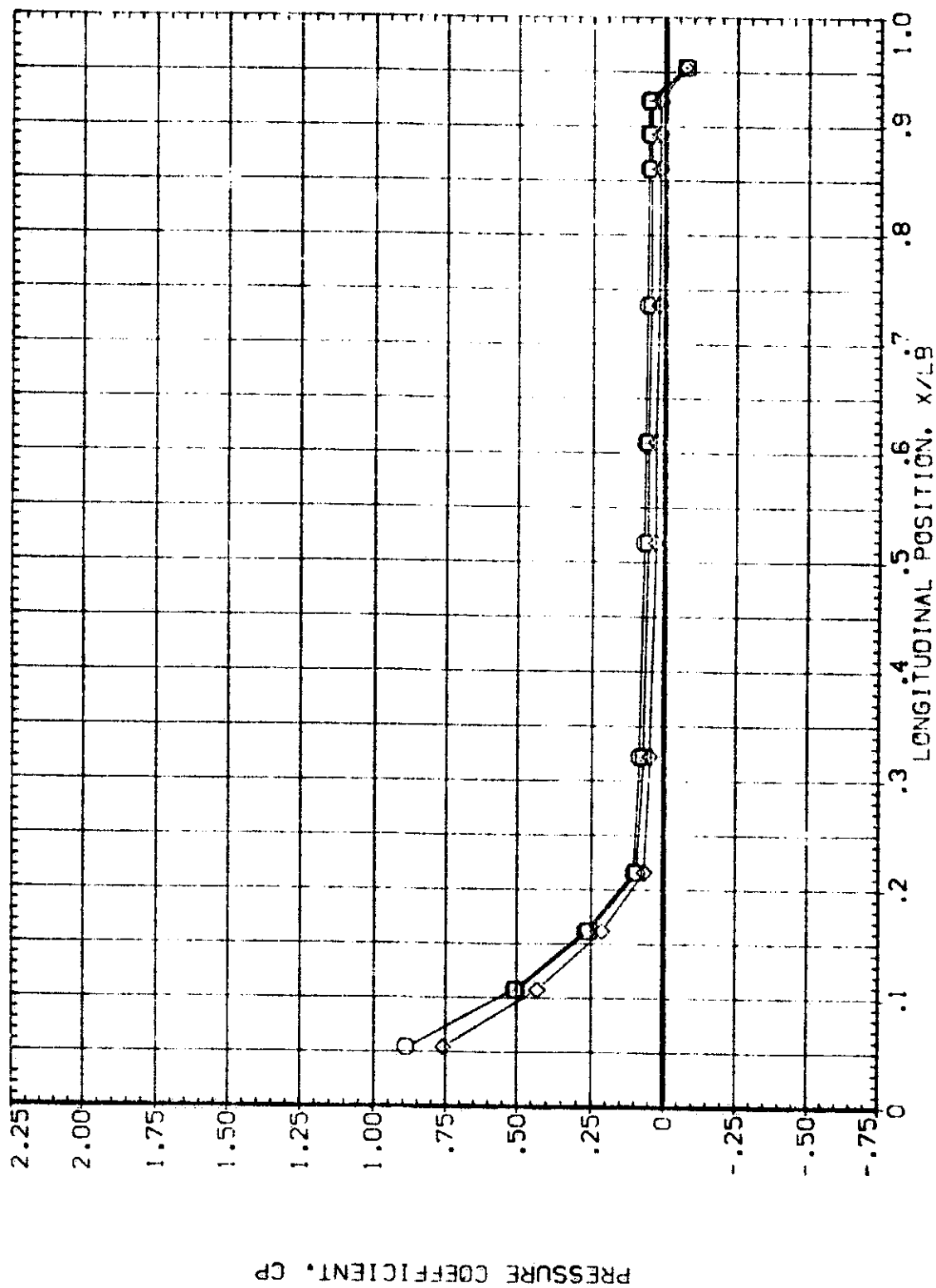


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A006)

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI .000

BETA  
 MOUNT

THETA ALPHA MACH  
 247.500 12.520 3.480  
 270.000  
 292.500

SYMBOL  
 □  
 ◇

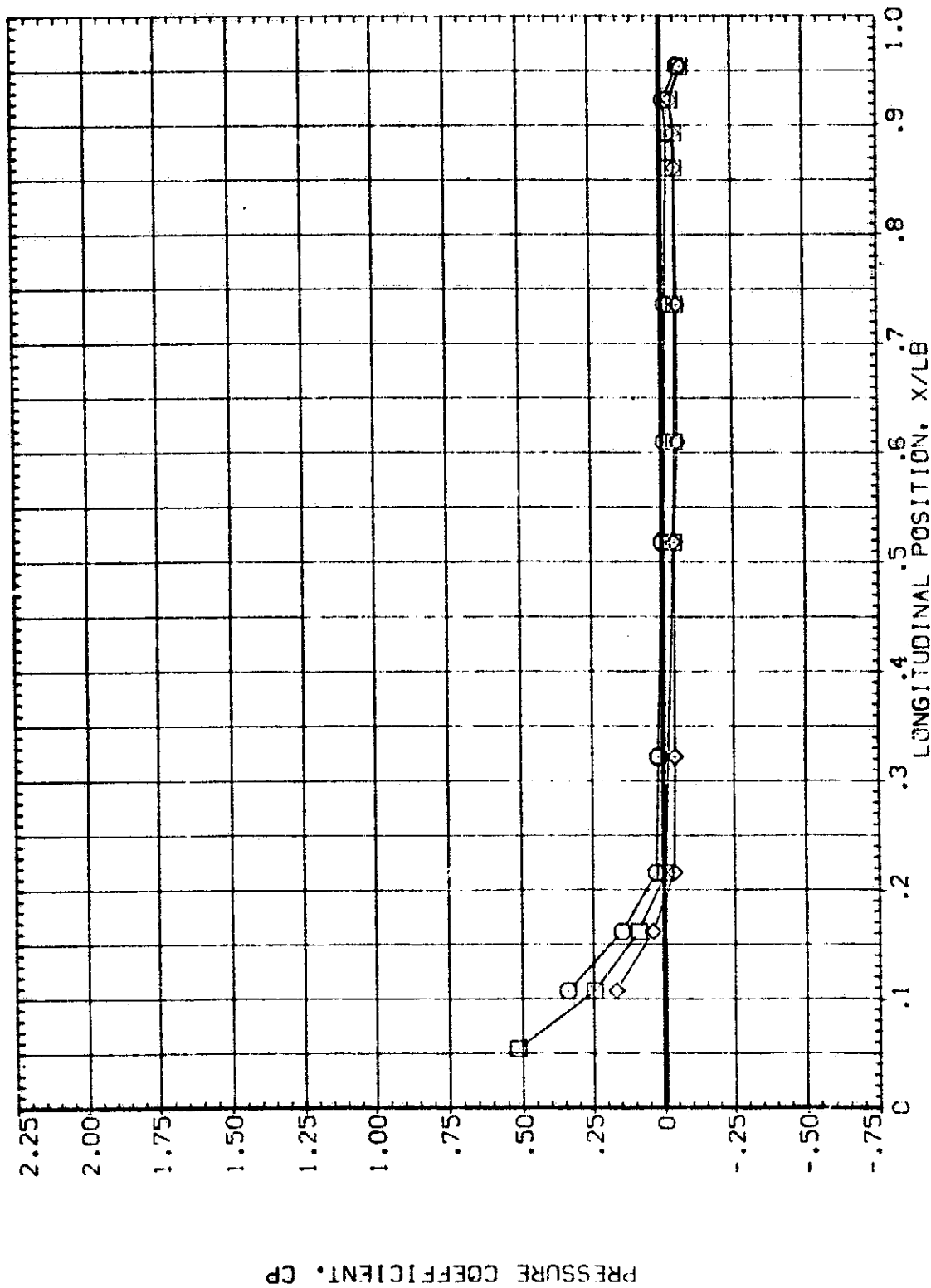


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A0006)

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
◇	315.000	12.520	3.480	0.000	OFFSET
□	326.000			1.000	PHI
◇	345.000			20.000	

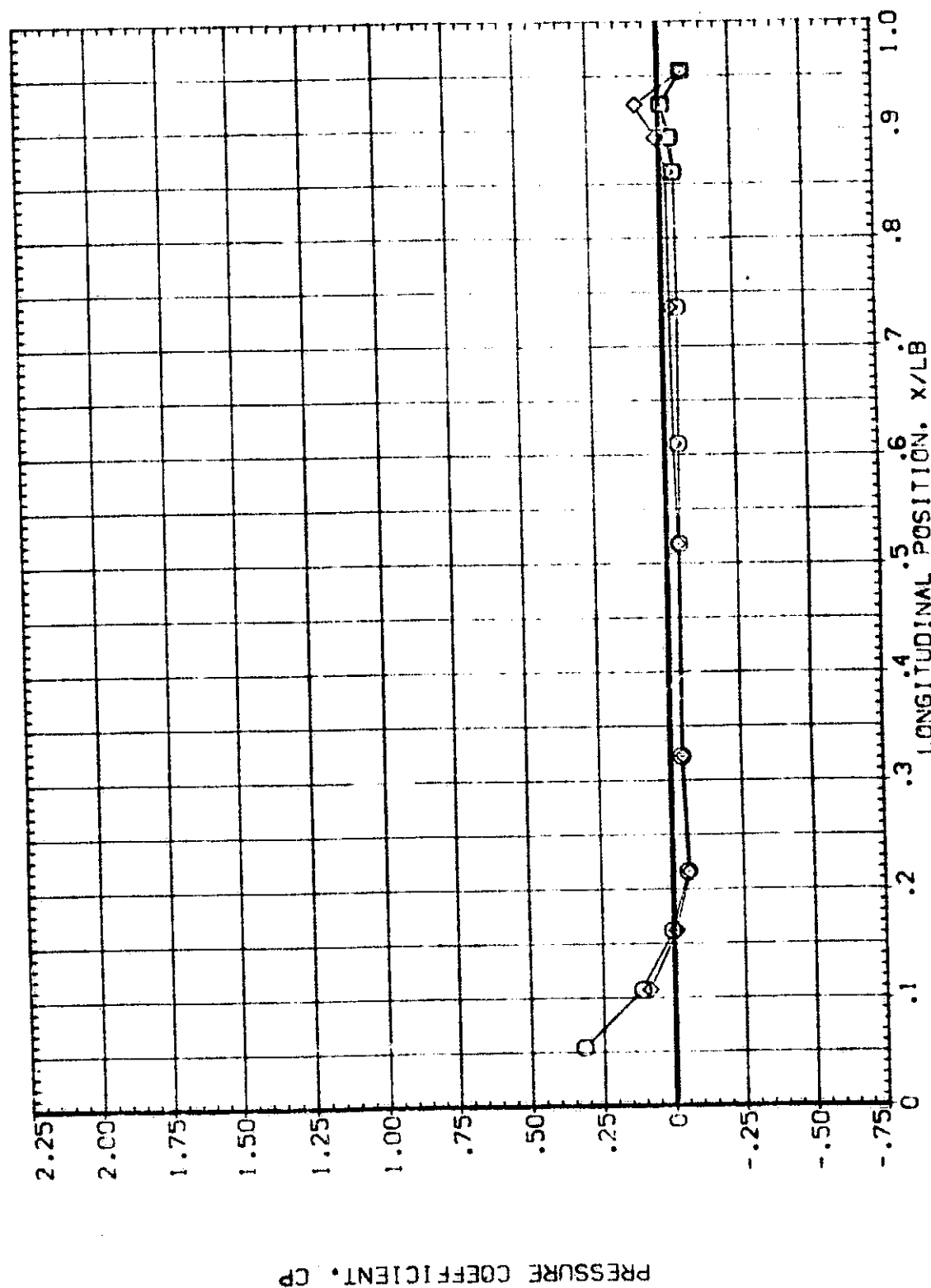


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A007)

SYMBOL  
 □  
 ◇

THETA .000  
 14.000  
 24.000

ALPHA 15.560

MACH 3.480

BETA  
 POINT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 .000

OFFSET  
 PH

20.000  
 .000

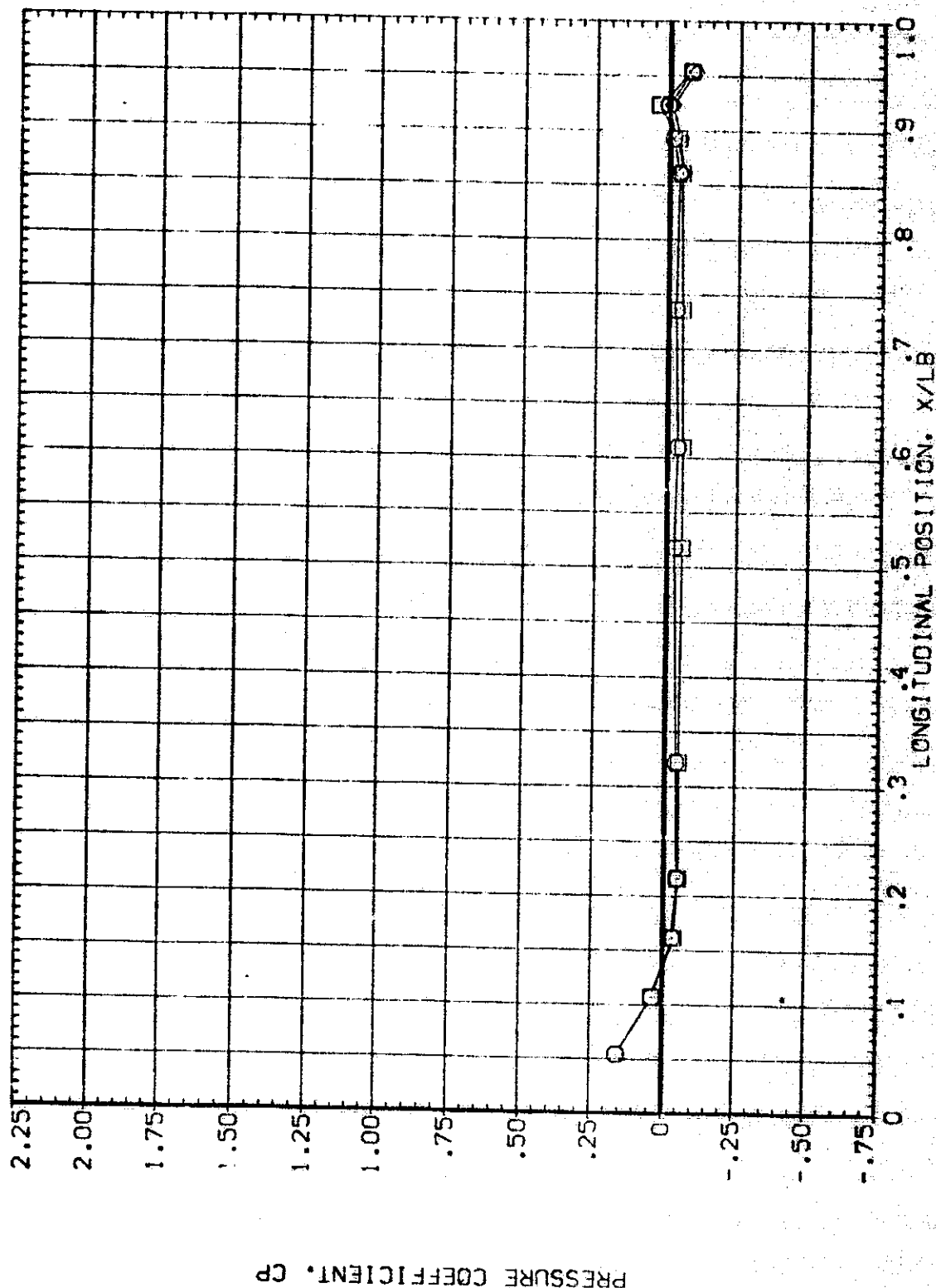


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
□	45.000	16.560	3.480	AMOUNT	.000 OFFSET
◇	87.500				1.000 PHI
	90.000				20.000

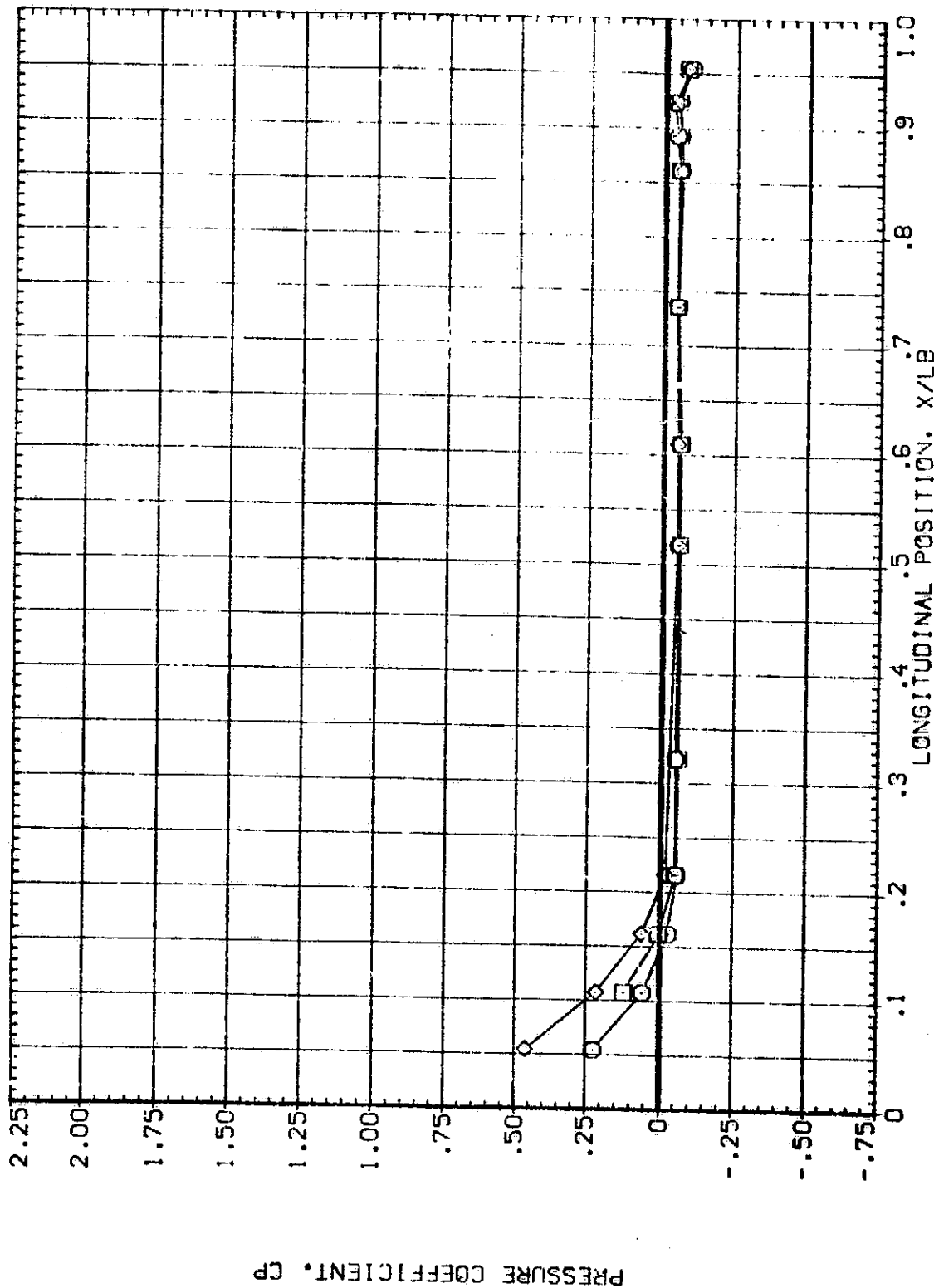


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA007)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	16.560	3.480	.000	.000	.000
□	135.000			1.000		
◇	157.500					

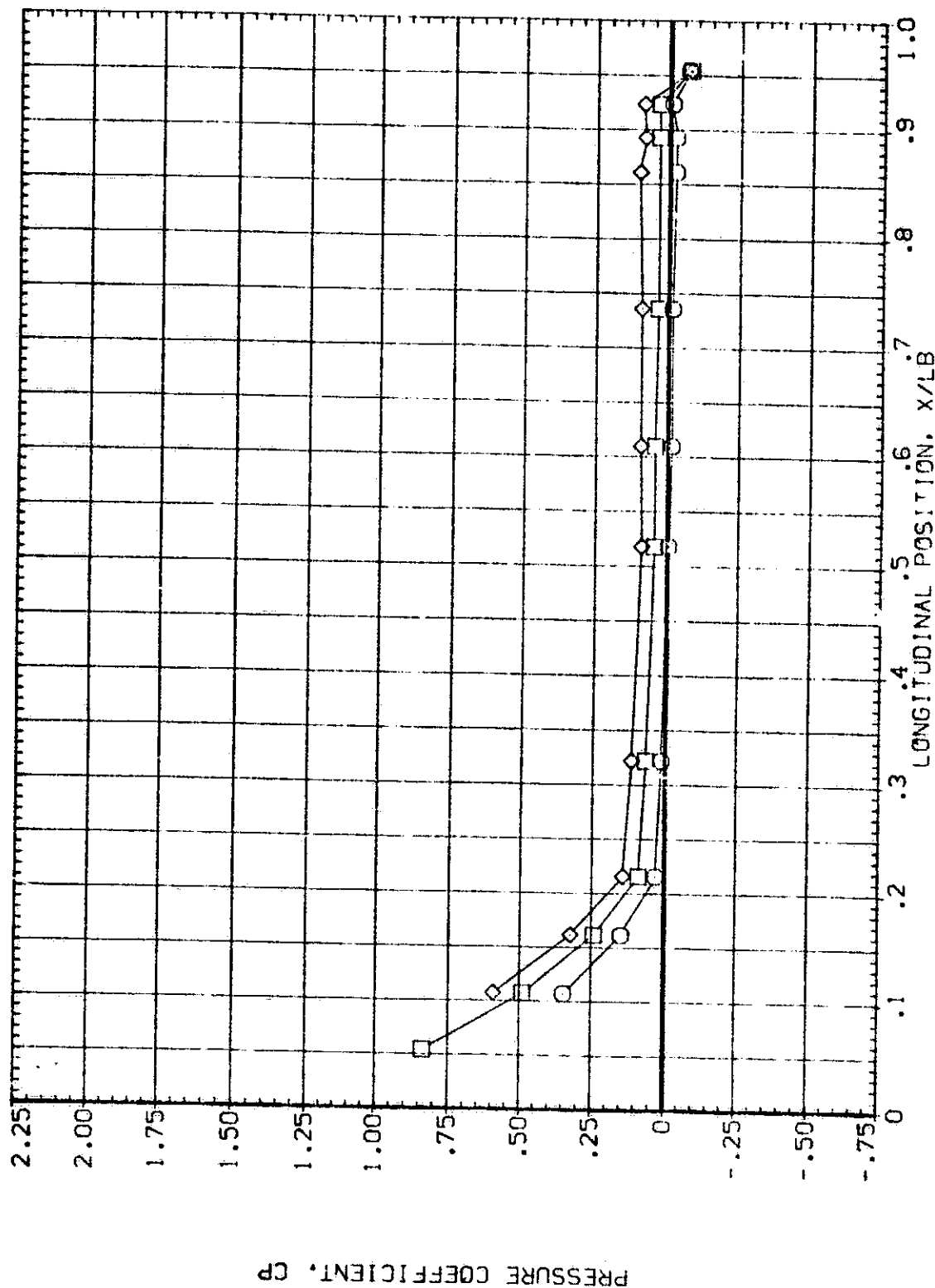


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL

THETA  
180.000  
232.500  
22° 00.0

ALPHA  
16.560

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000 .000  
1.000 PHI

20.000  
.000

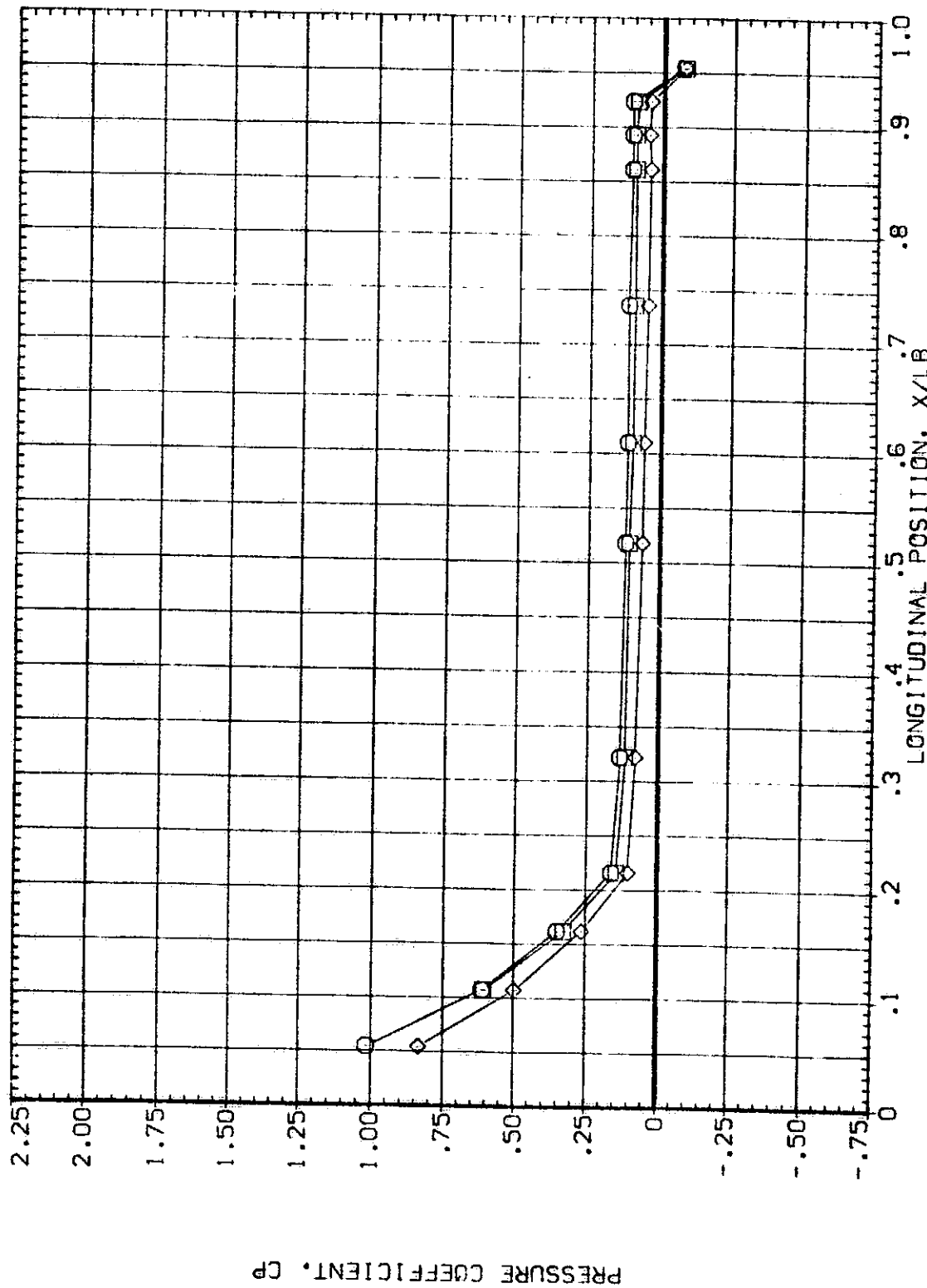


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A007)

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	247.500	16.560	3.480	W/UNT	.000 OFFSET 20.000
□	270.000				1.000 PHI .000
◇	292.500				

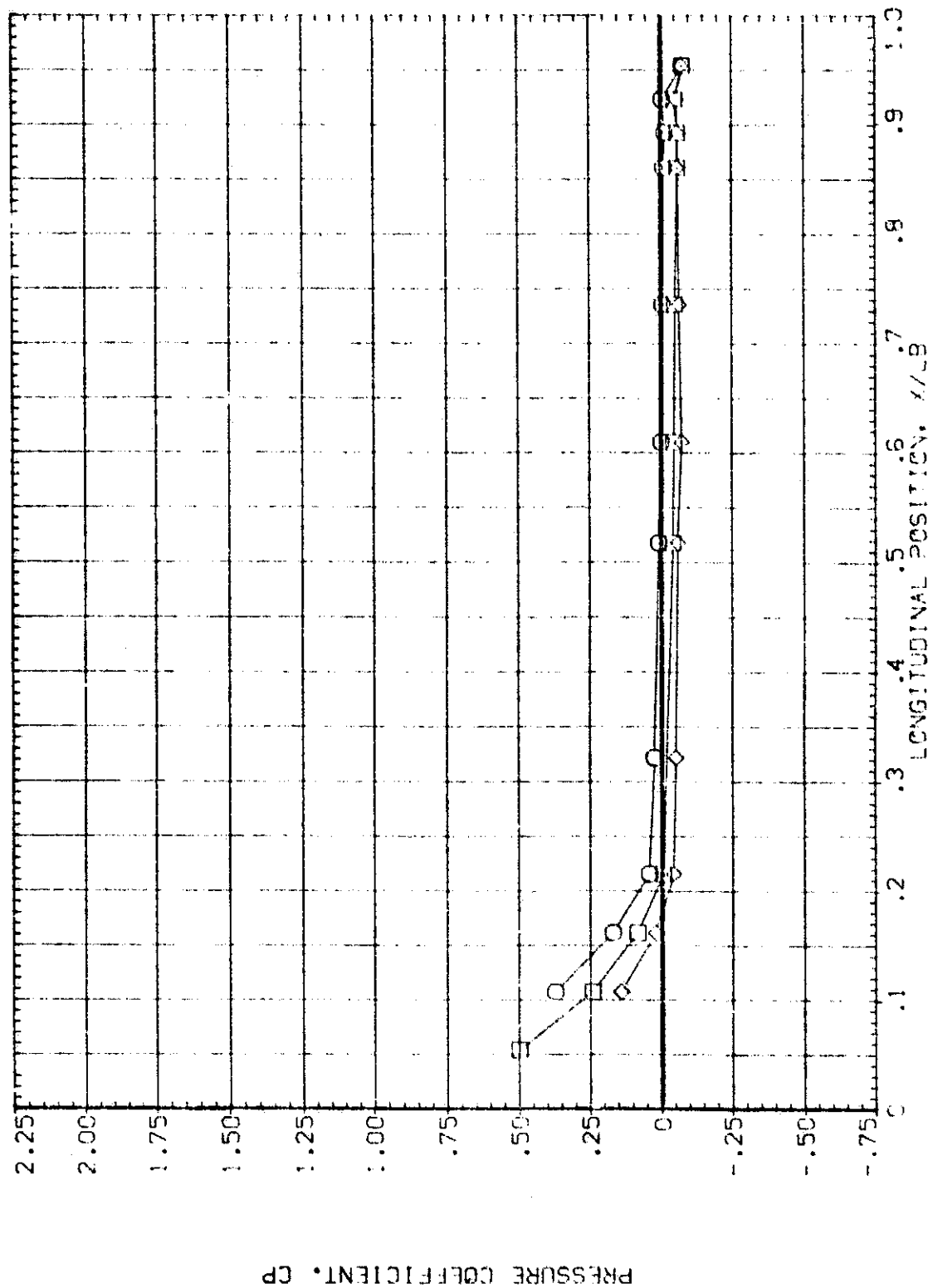


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA007)

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
16.560  
MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT  
1.000  
PHI  
20.000  
.000

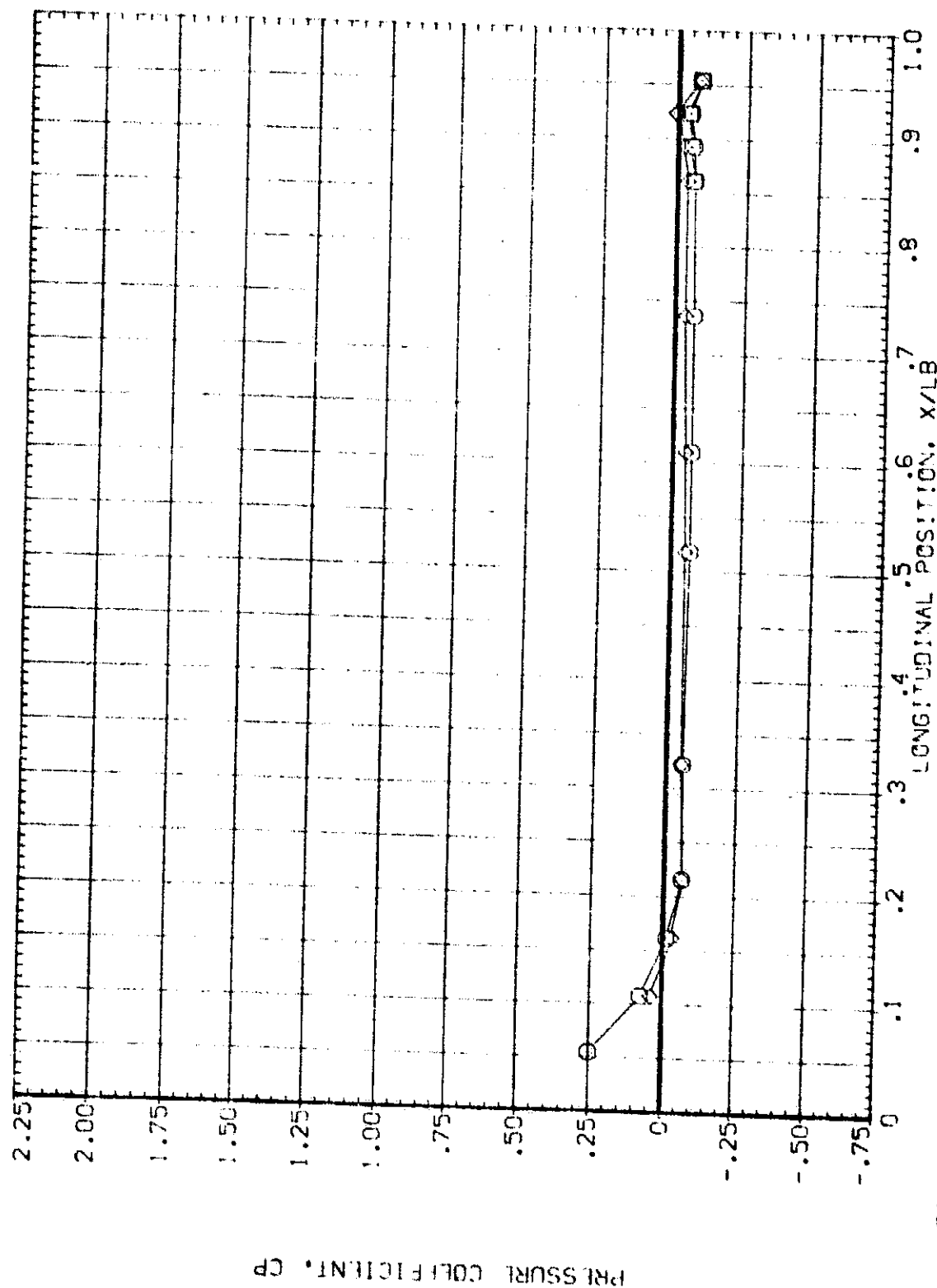


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA008)

SYMBOL  
□  
◇

THETA  
.000  
14.000  
24.000

ALPHA  
20.610

MAJH  
3.480

BETA  
MDUNT

PARAMETRIC VALUES  
.000 .000  
1.000 PHI  
20.000 .000

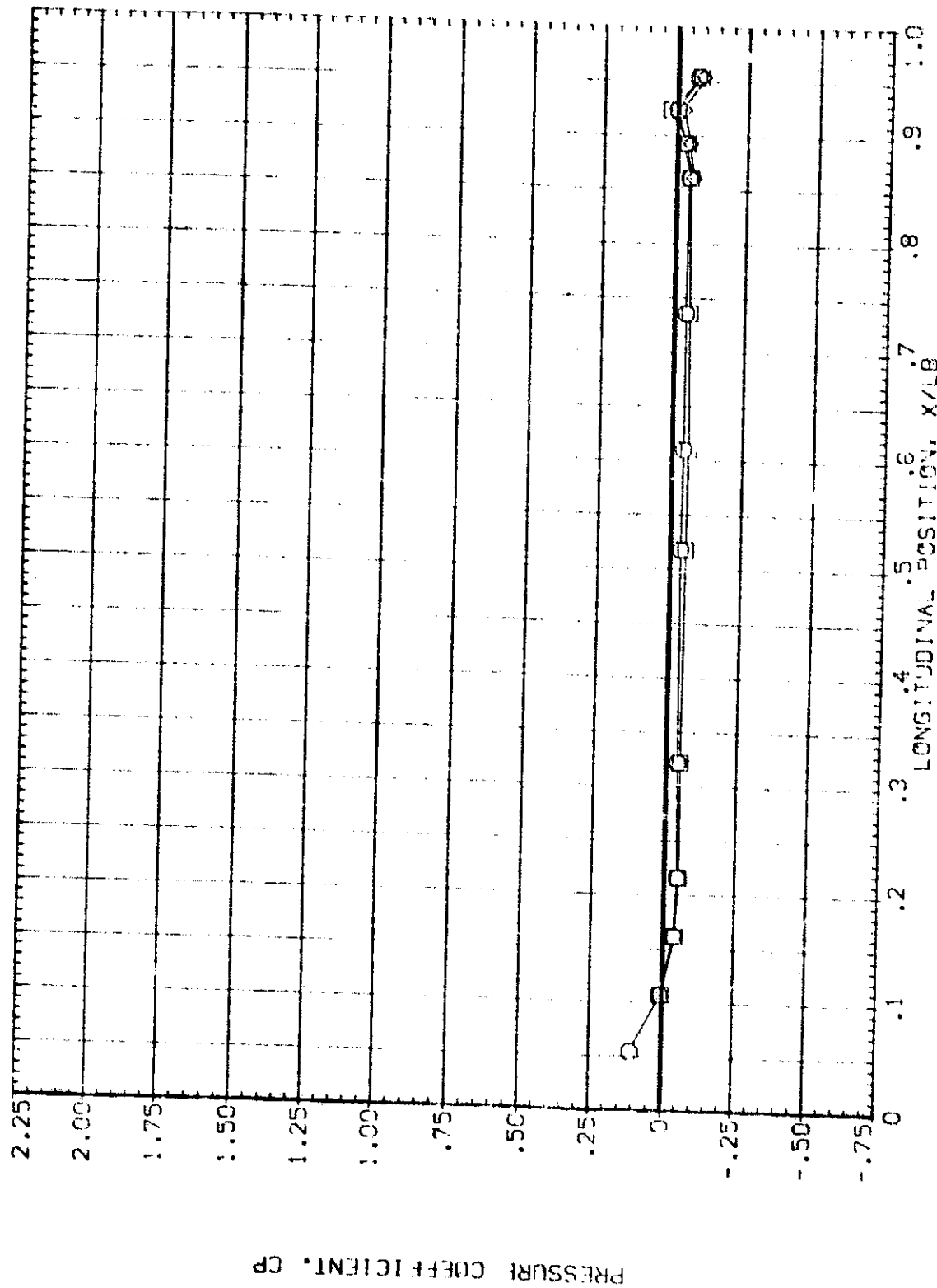


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A008)

SYMBOL  
□  
□  
◇

THETA  
45.000  
57.500  
90.000

ALPHA  
20.610

MACH  
3.480

BETA  
HOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
20.000  
.000

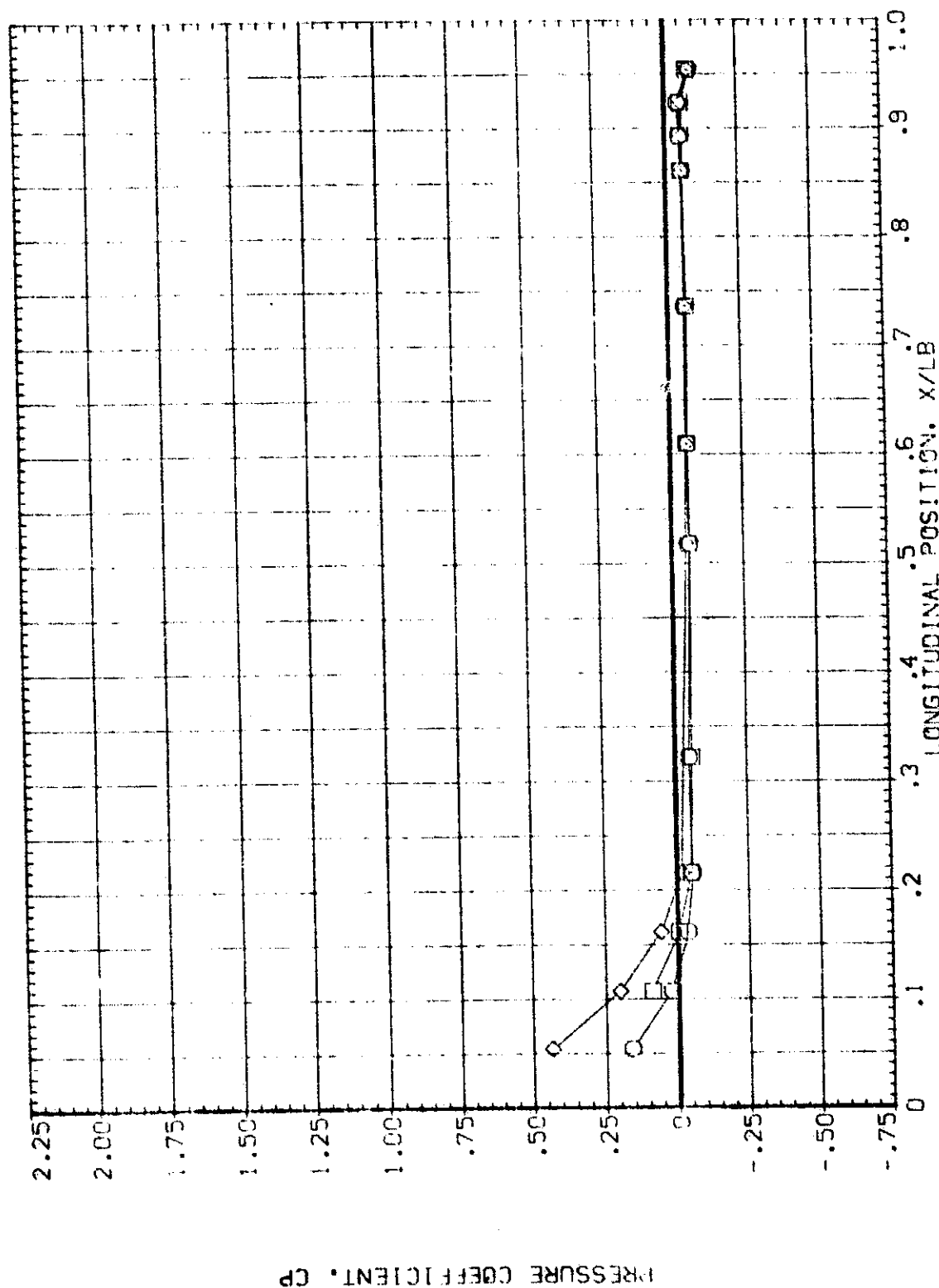


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (PIA008)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 20.610

MACH  
 3.480

BETA  
 HOUNY

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI  
 20.000  
 .000

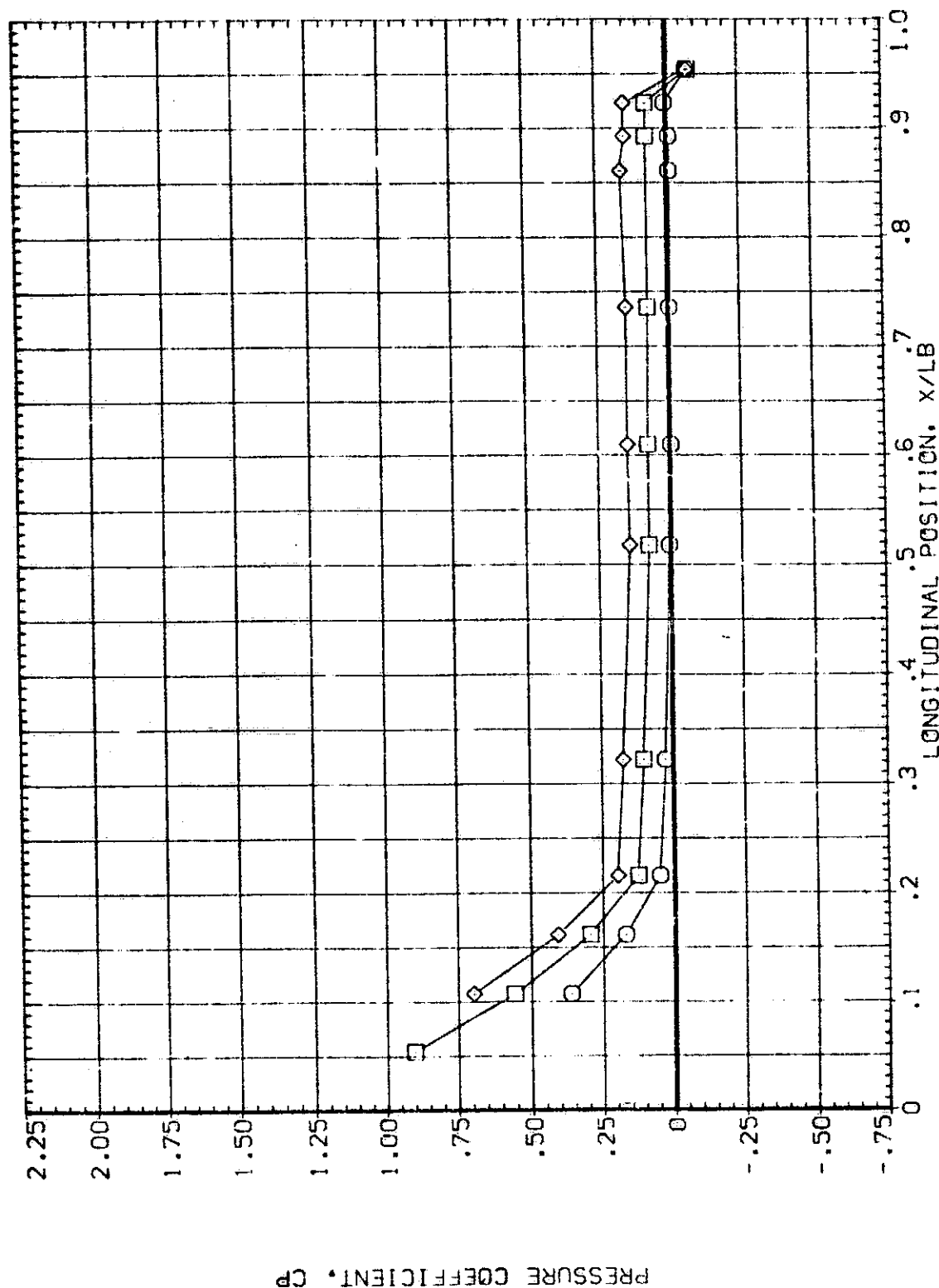


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA008)

SYMBOL	T1-BETA		ALPHA	MACH	PARAMETRIC VALUES		
	180.000	202.500			BETA MDUNT	OFFSET PHI	20.000 .000
○			20.610	3.480	1.000		
□							
◇							

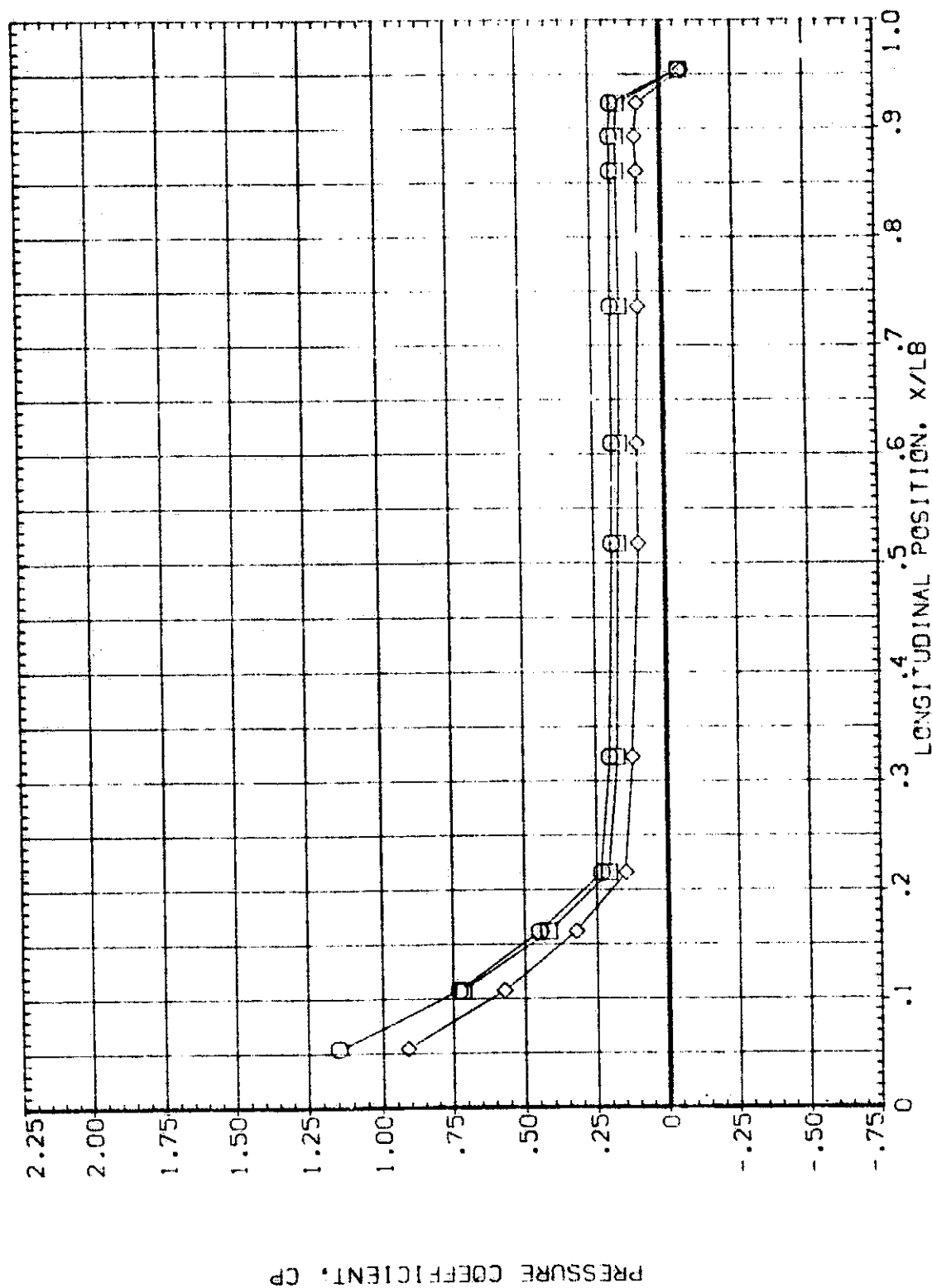


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA008)

SYMBOL  
○  
□  
◇

THETA  
247.500  
270.000  
292.500

ALPHA  
20.610

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000

OFFSET  
PHI  
20.000  
.000

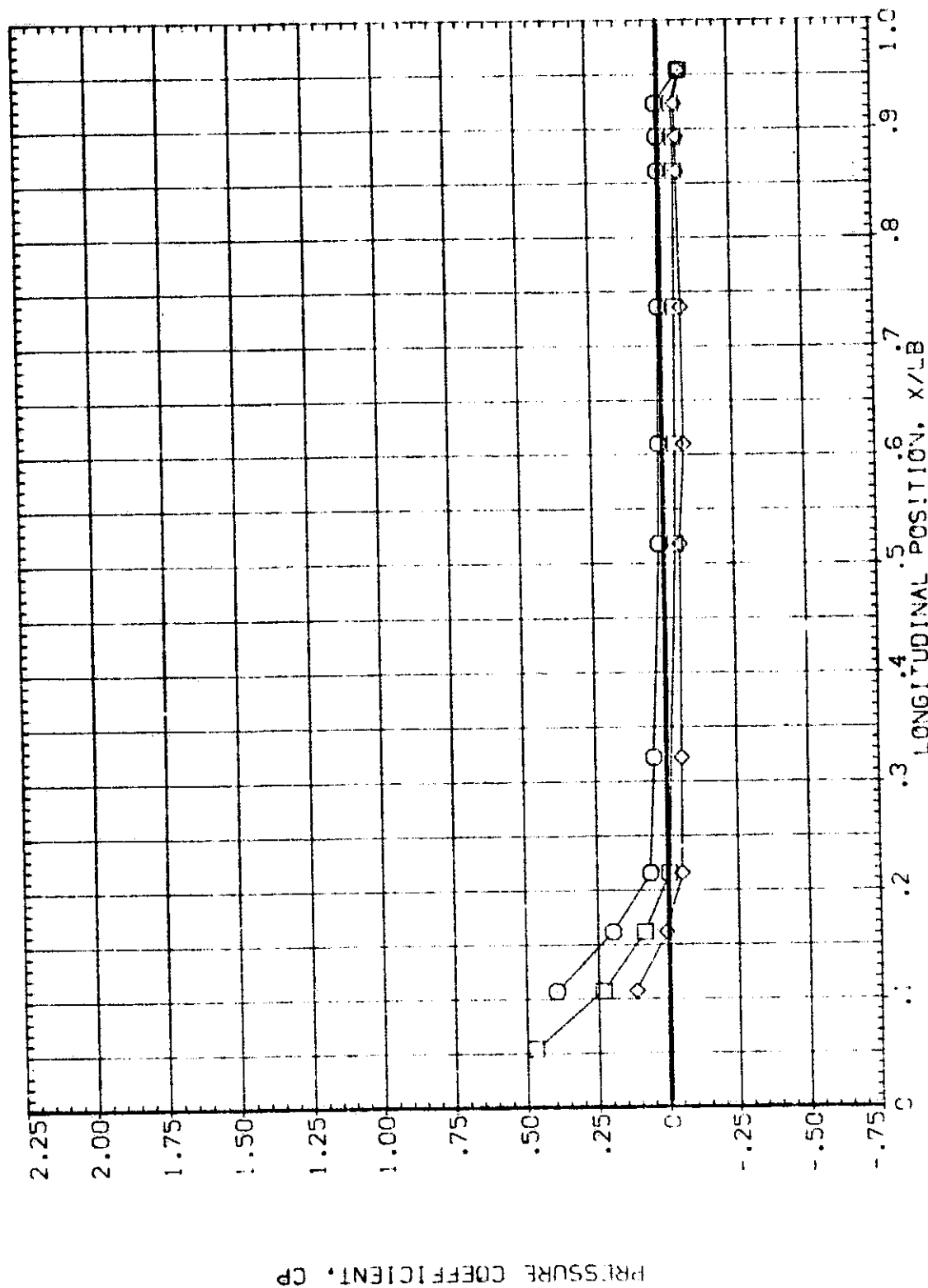


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	20.610	3.480	MOUNT	.000
□	326.000			OFFSET	20.000
◇	346.000			PHI	.000

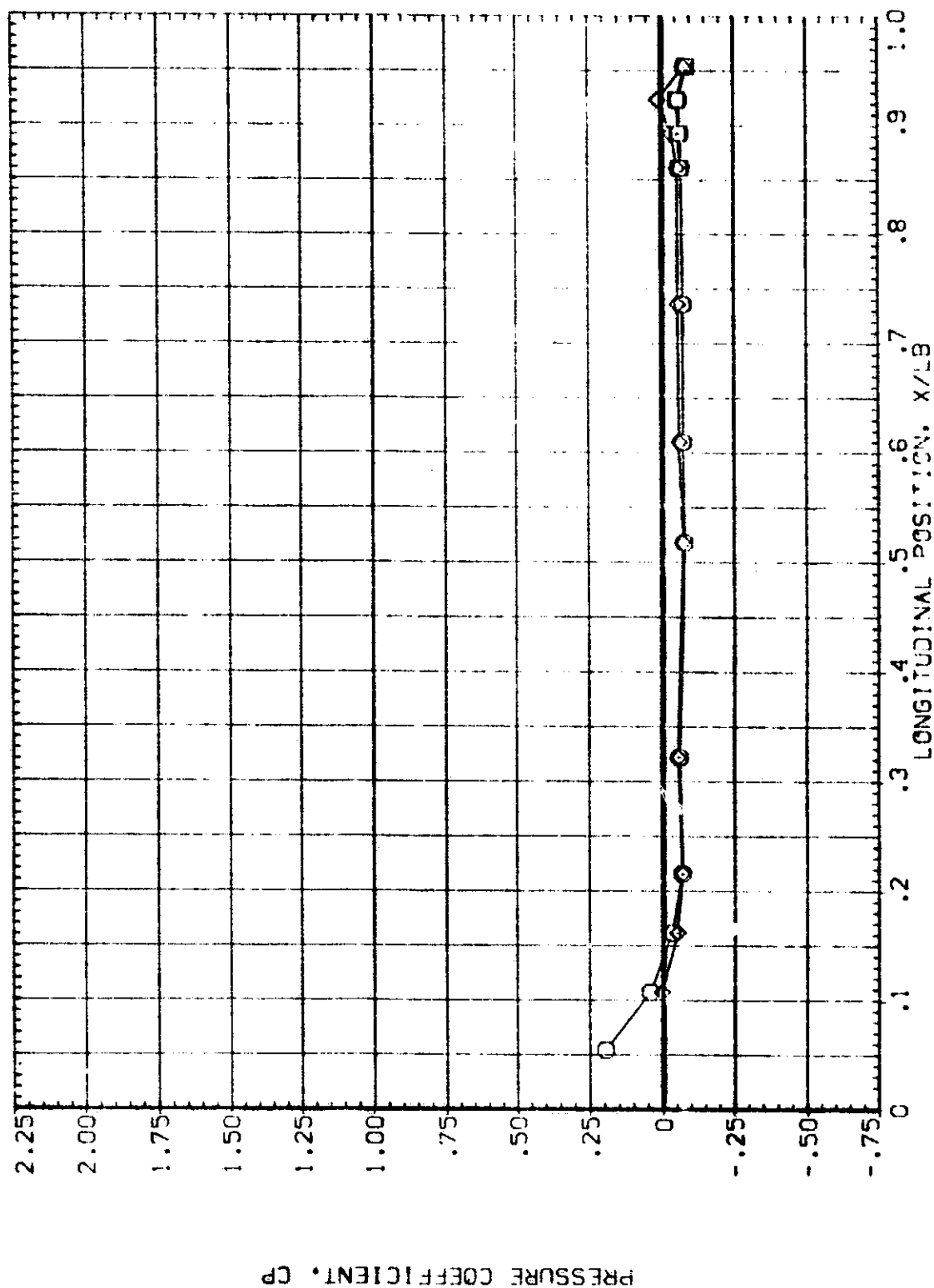


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA009)

SYMBOL  
 ◇  
 ○  
 □

THETA .000  
 14.000  
 24.000

ALPHA 24.660

MACH 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000

OFFSET  
 PH1

20.000  
 .000

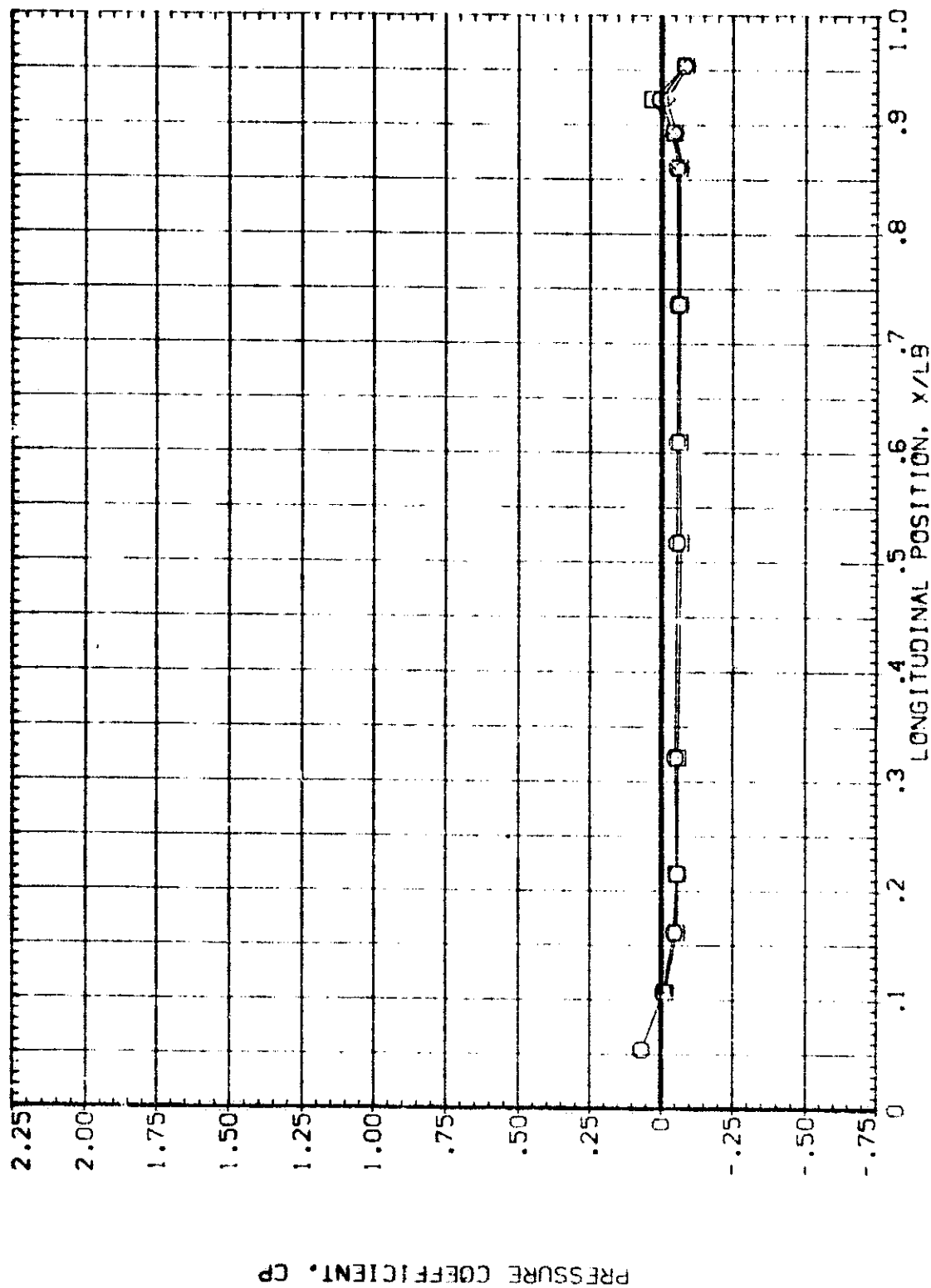


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
BETA .000 OFFSET 20.000  
MOUNT 1.000 PHI .000

THETA ALPHA MACH  
45.000 24.660 3.480

SYMBOL  
◇  
□  
○  
90.000

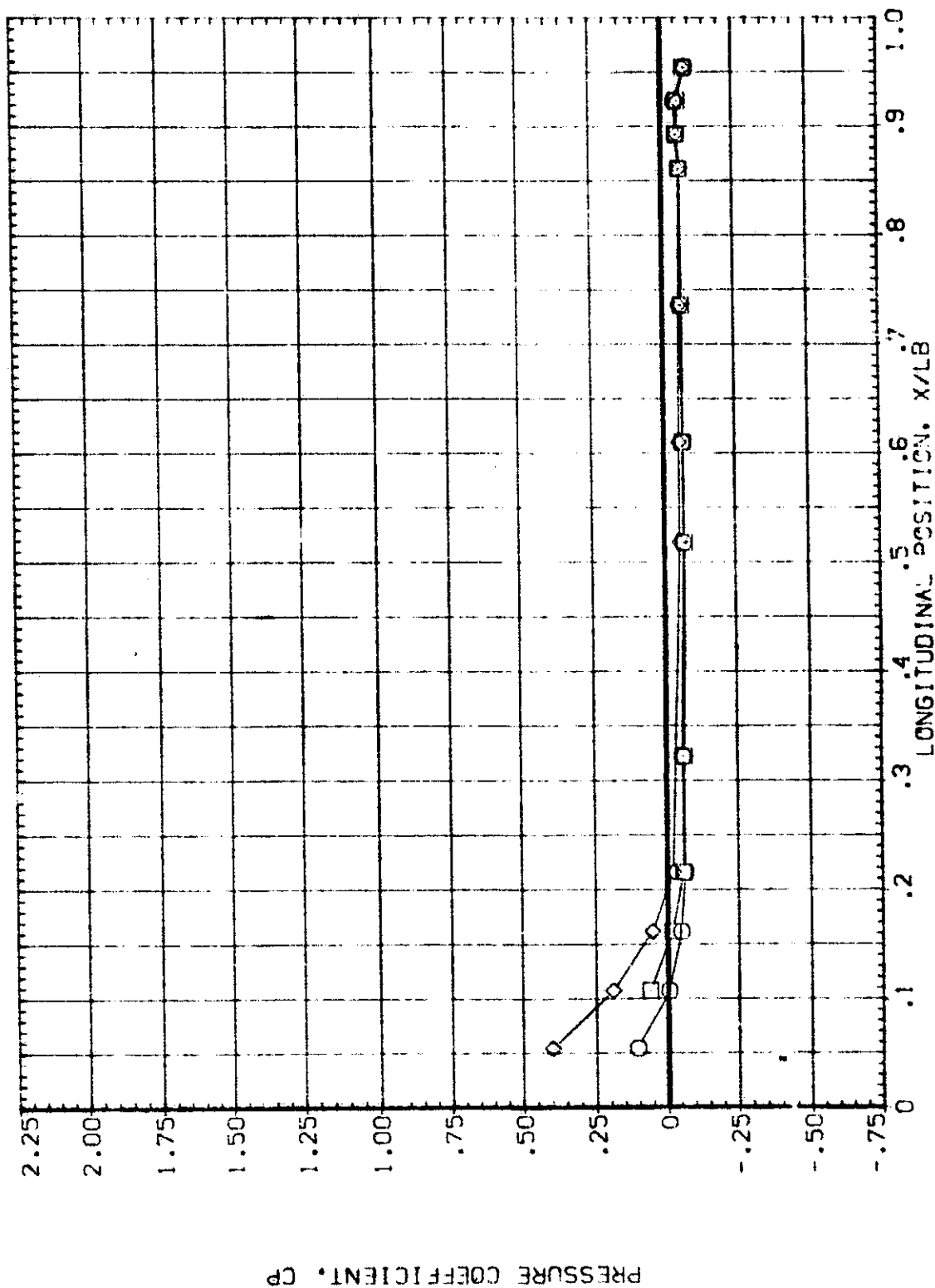


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A009)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 24.660

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 .000  
 .000  
 .000

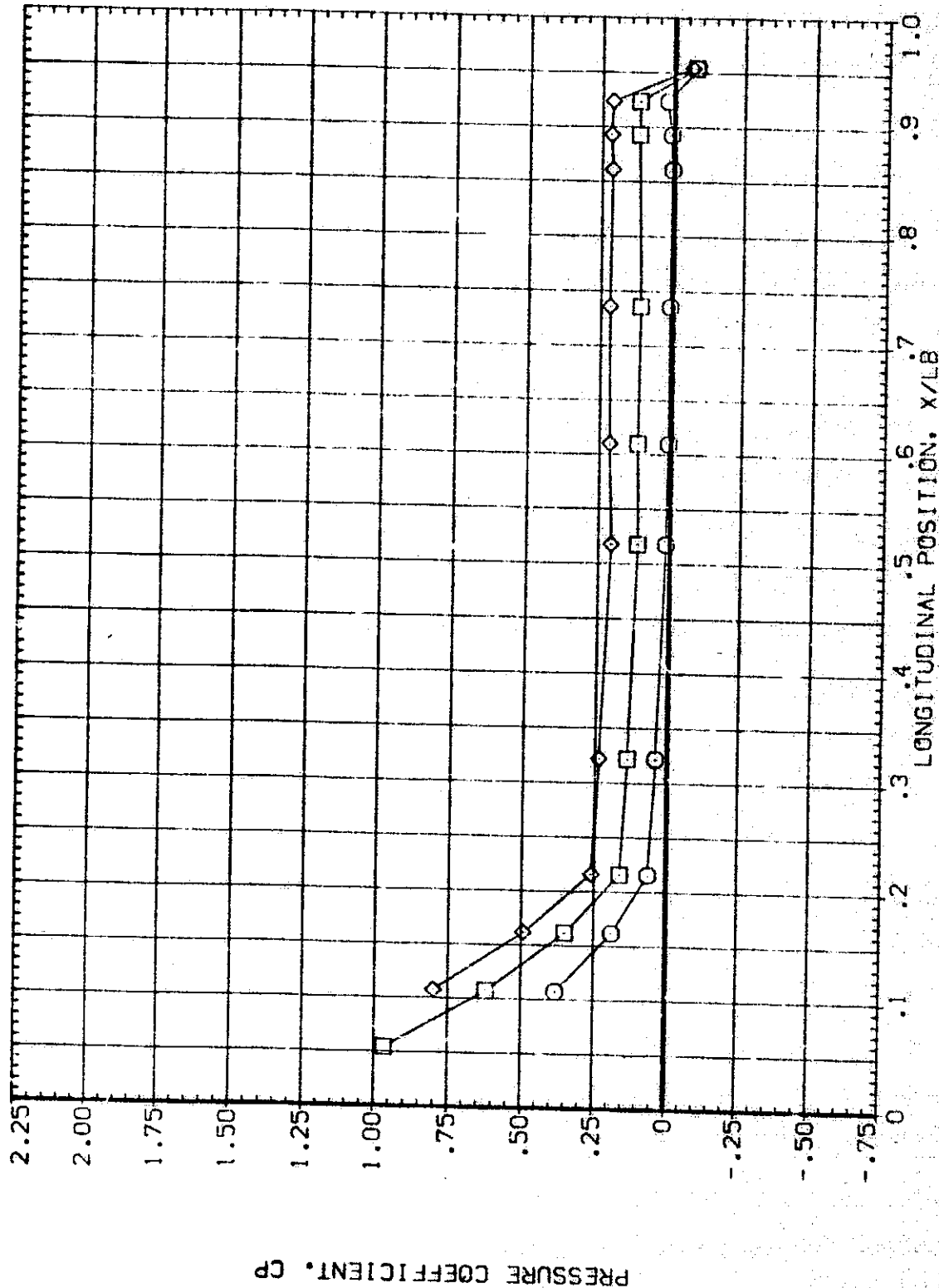


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA009)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20.000
○	190.000	24.660	3.480	.000	PHI	.000
□	232.500			1.000		
◇	225.000					

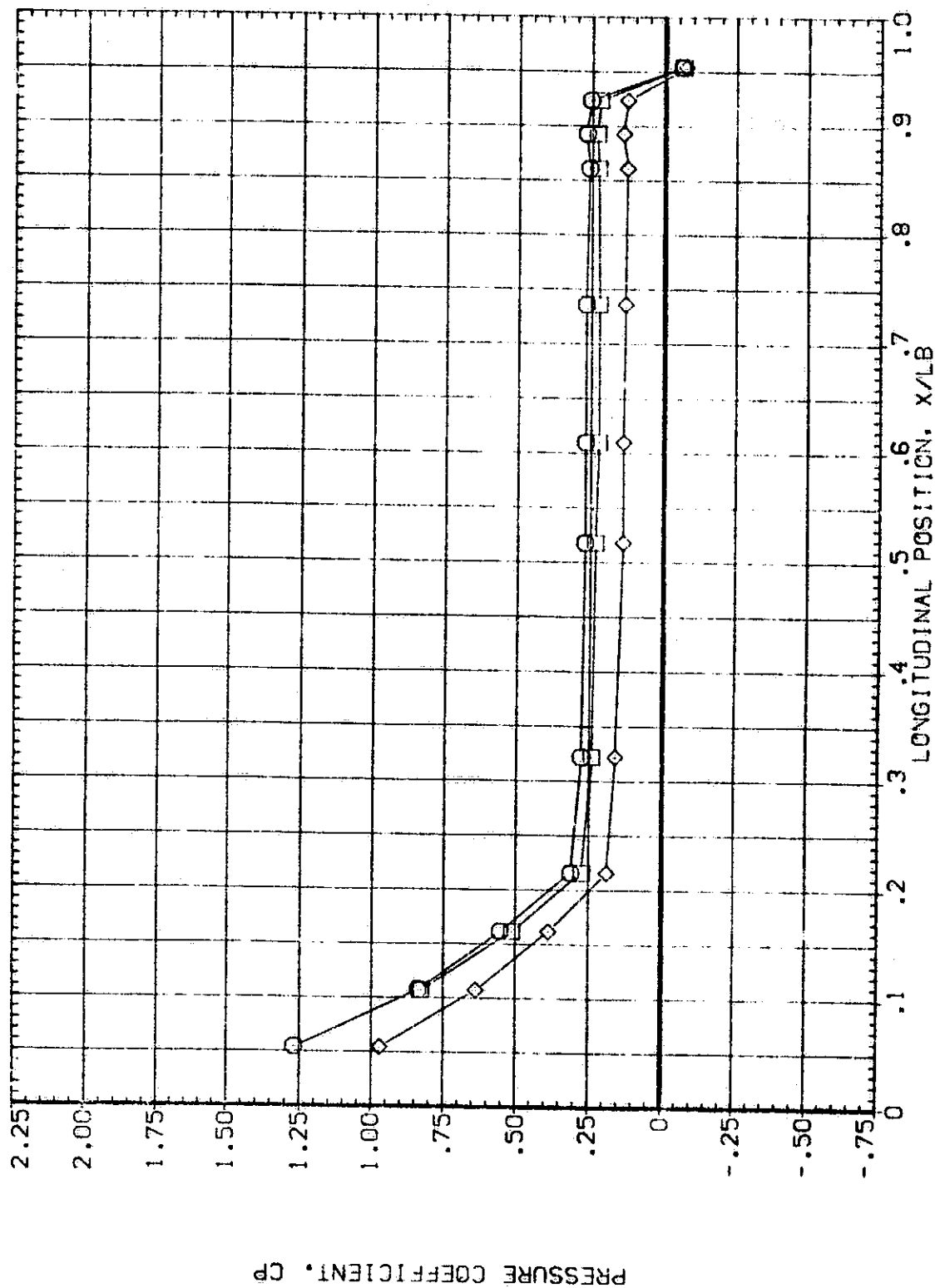


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA009)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20.000
○	247.500	24.650	3.480	1.000	PHI	.000
□	270.060					
◇	292.500					

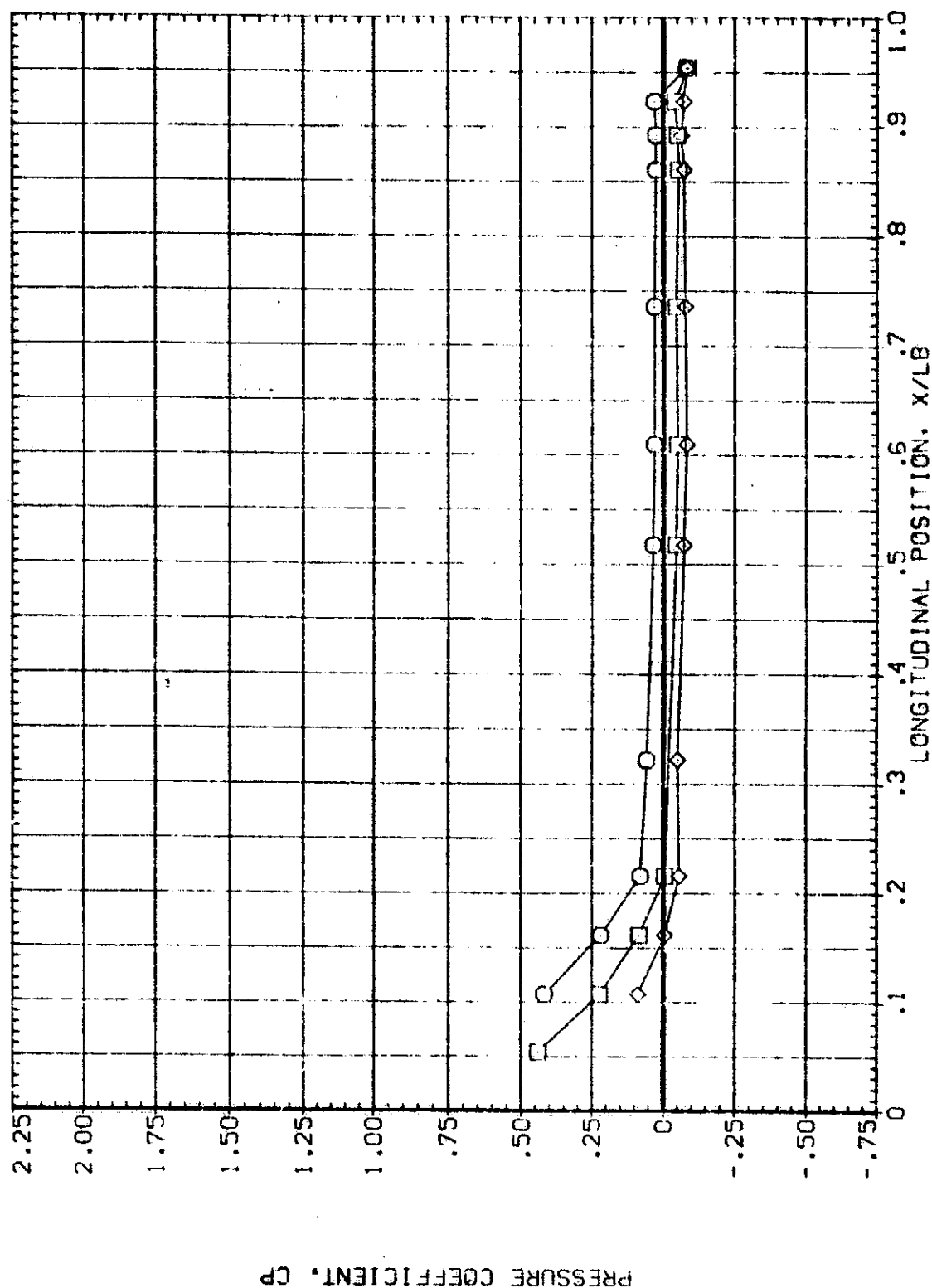


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA009)

SYMBOL

315.000  
326.000  
346.000

ALPHA 24.650  
MACH 3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000 .000 .000  
1.000 1.000 1.000

20.000  
.000

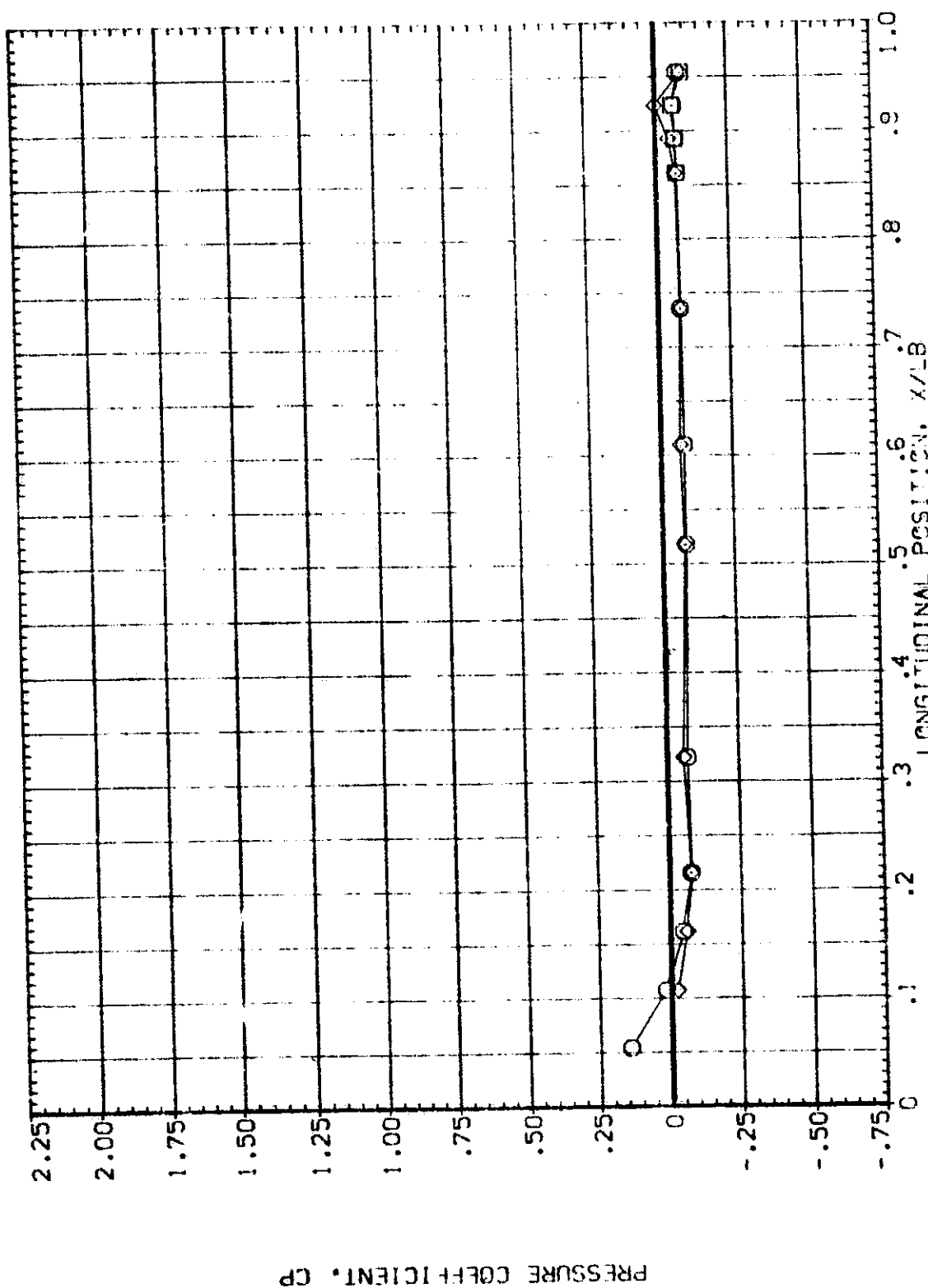


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA010)

SYMBOL  
◇  
□  
○

THE TA .000  
14.000  
24.000

ALPHA 28.700

HACH 3.480

PARAMETRIC VALUES

BETA	OFFSET	PHI
1.000	.000	.000
20.000	.000	.000

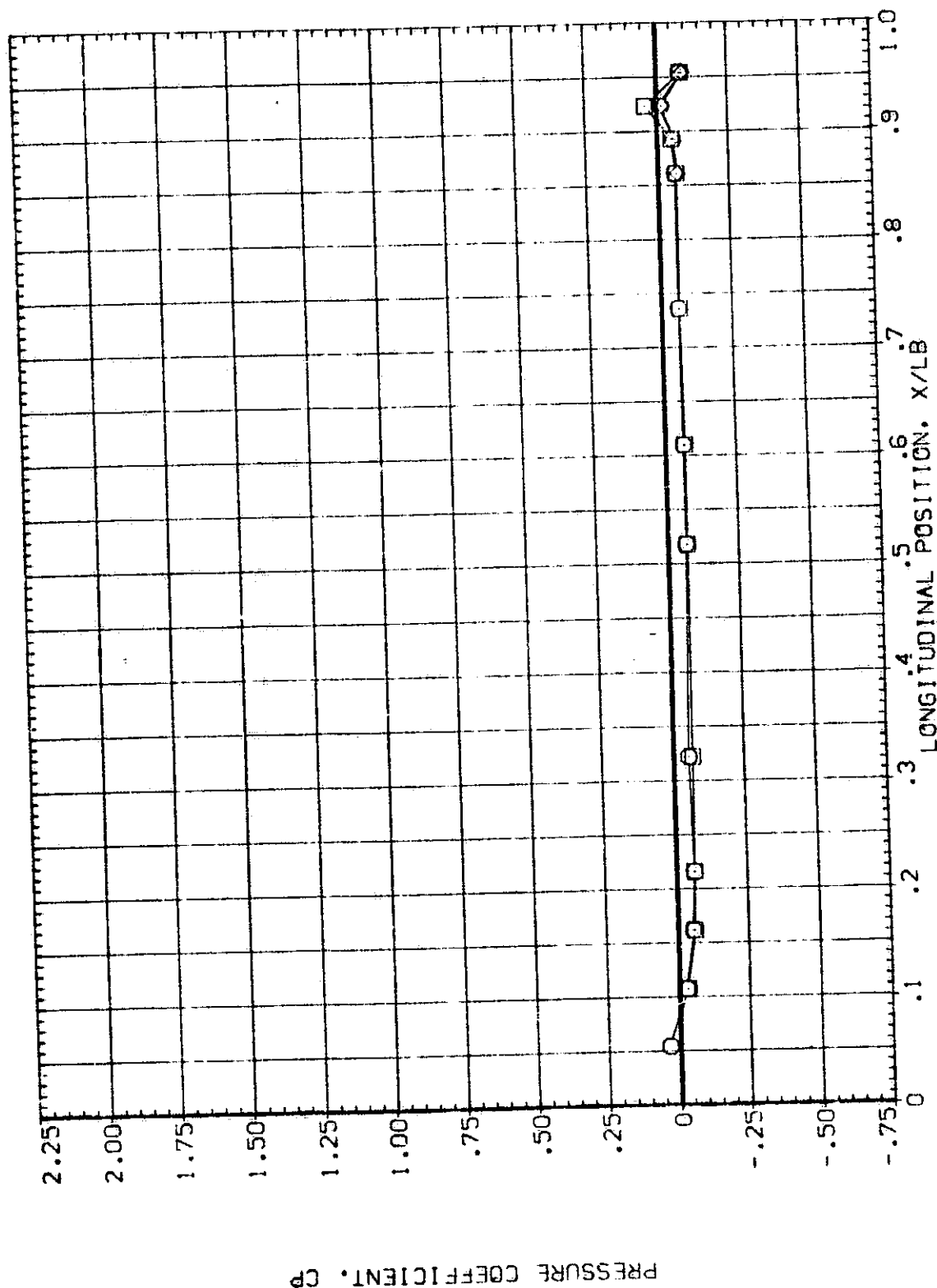


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA010)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 28.700

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI  
 20.000  
 .000

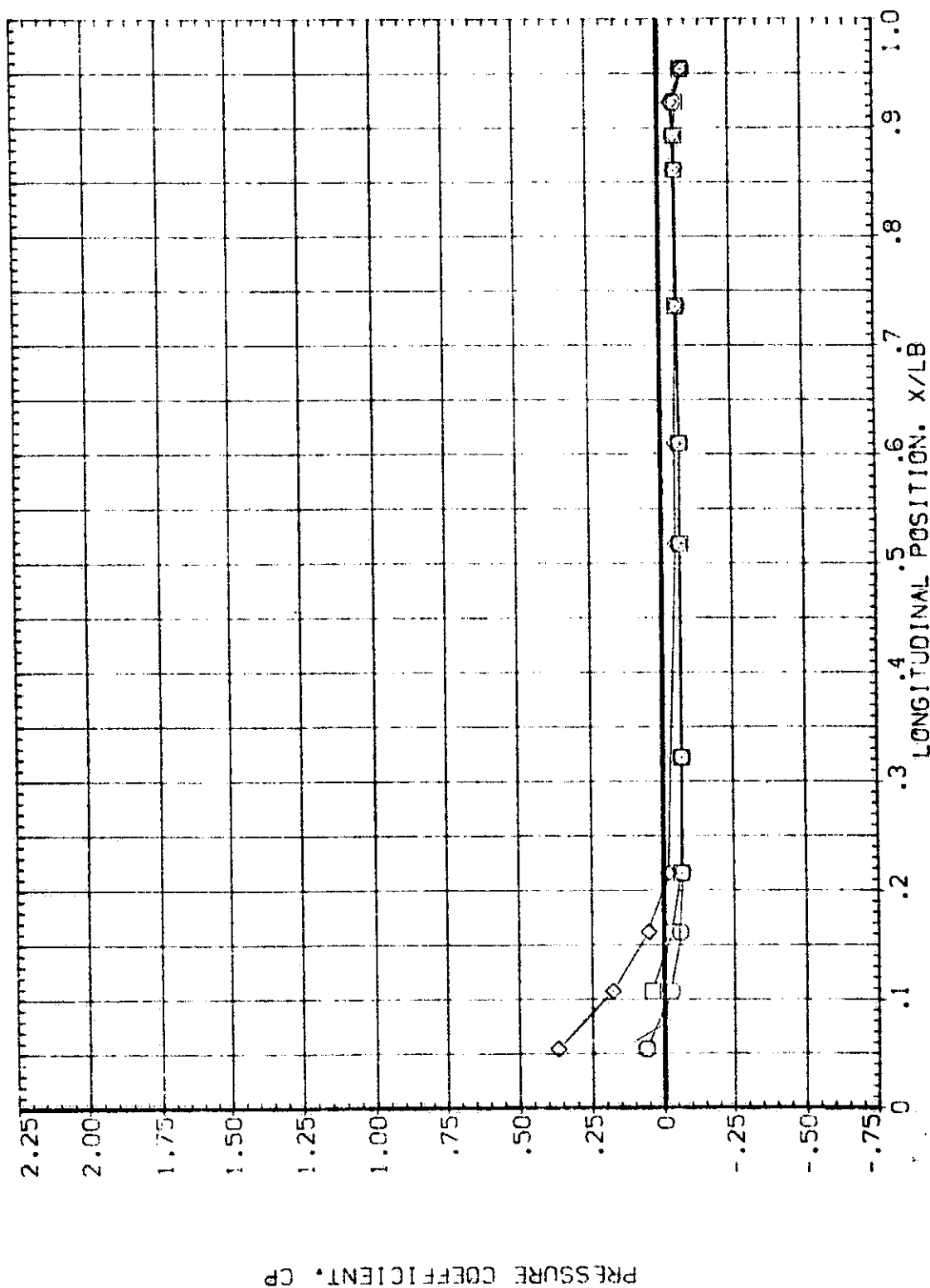


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA010)

SYMBOL

112.500  
 135.000  
 157.500

ALPHA  
 28.700

MACH  
 3.480

PARAMETRIC VALUES

BETA  
 MOUNT  
 .000  
 1.000  
 PHI  
 20.000  
 .000

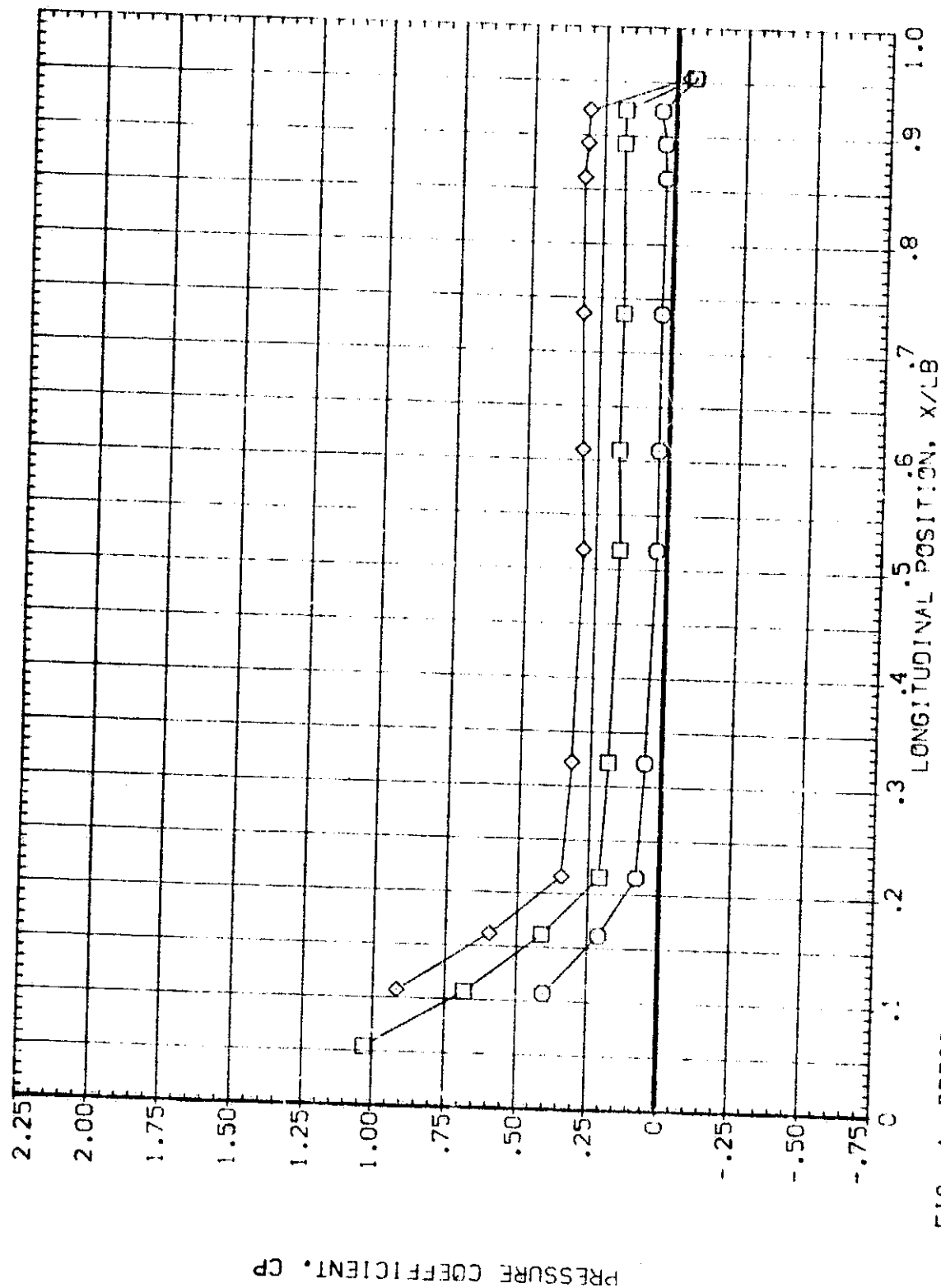


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA010)

SYMBOL	T-BETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20.000
				MOUNT	PHI	.000
□	180.000	28.700	3.480			
◇	232.500					
◇	225.000					

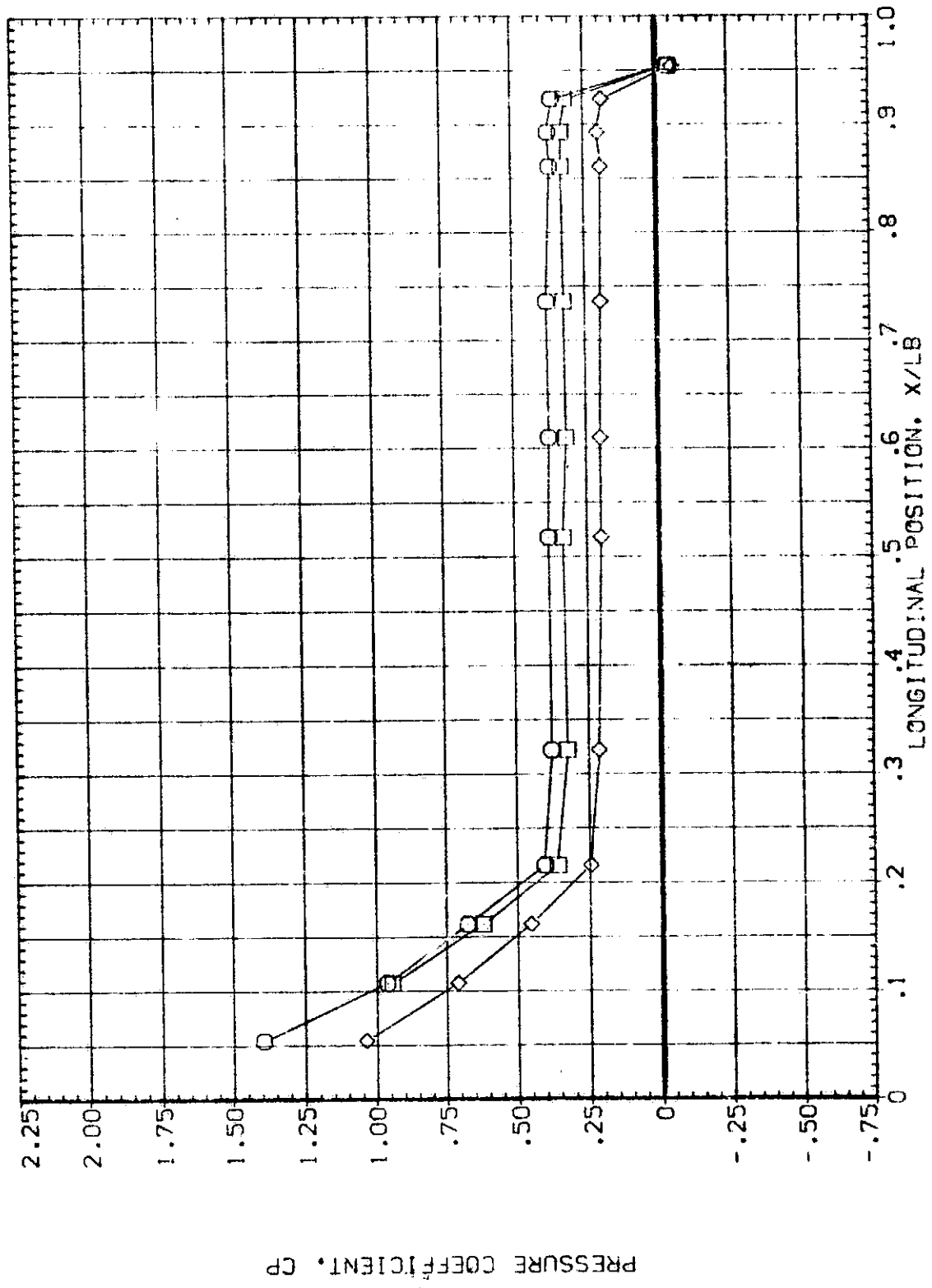


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA010)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20,000
□	247.500	28.700	3.480	MDUNT	1.000	PHI
◇	270.000					.000
◇	292.500					

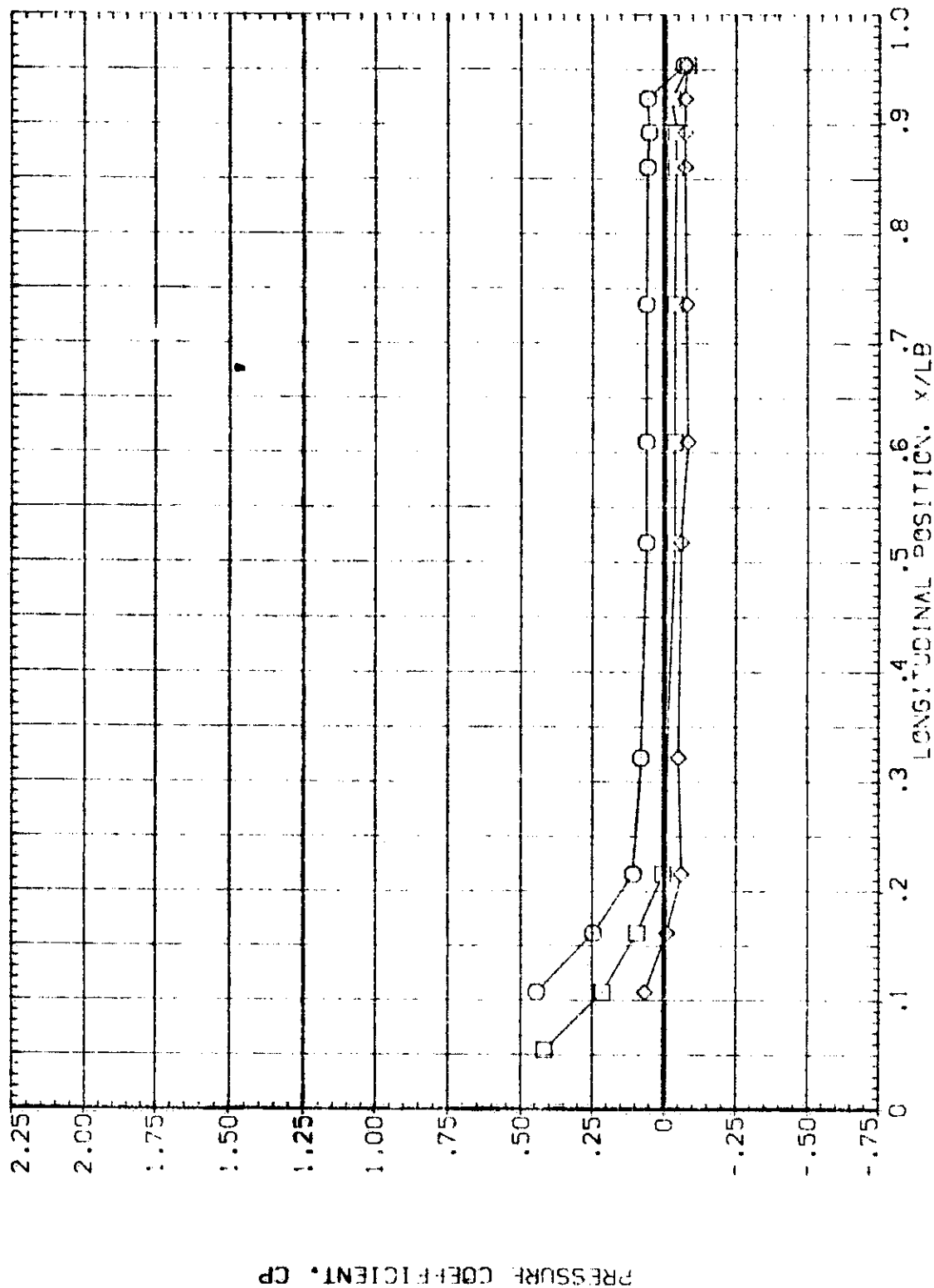


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	28.700	3.480	MOUNT	.000
□	326.000			PHI	.000
◇	346.000				

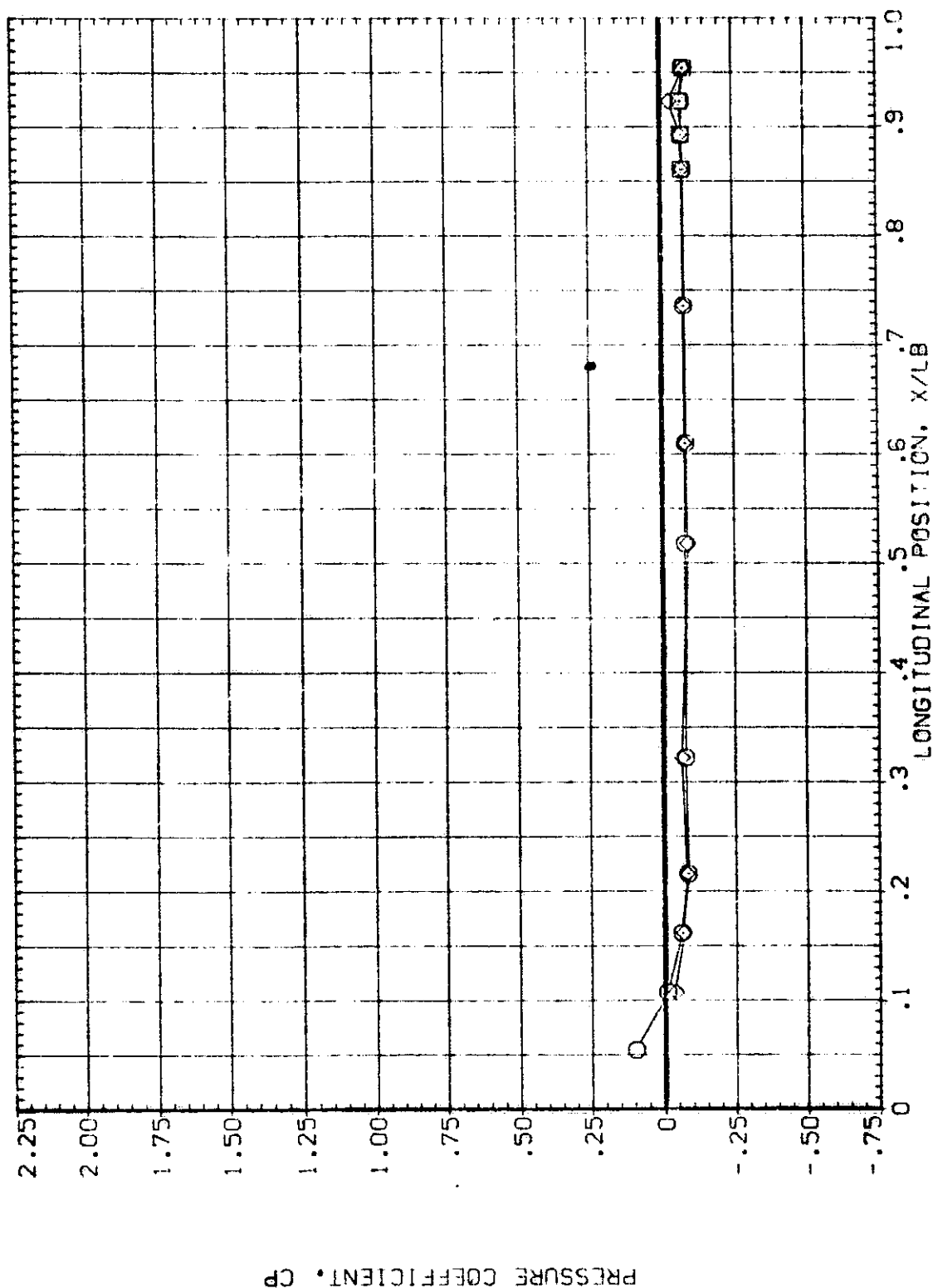


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A081)

SYMBOL

THETA  
-0.000  
14.000  
24.000

ALPHA  
-8.380

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
-0.000  
1.000  
OFFSET  
PHI  
45.000

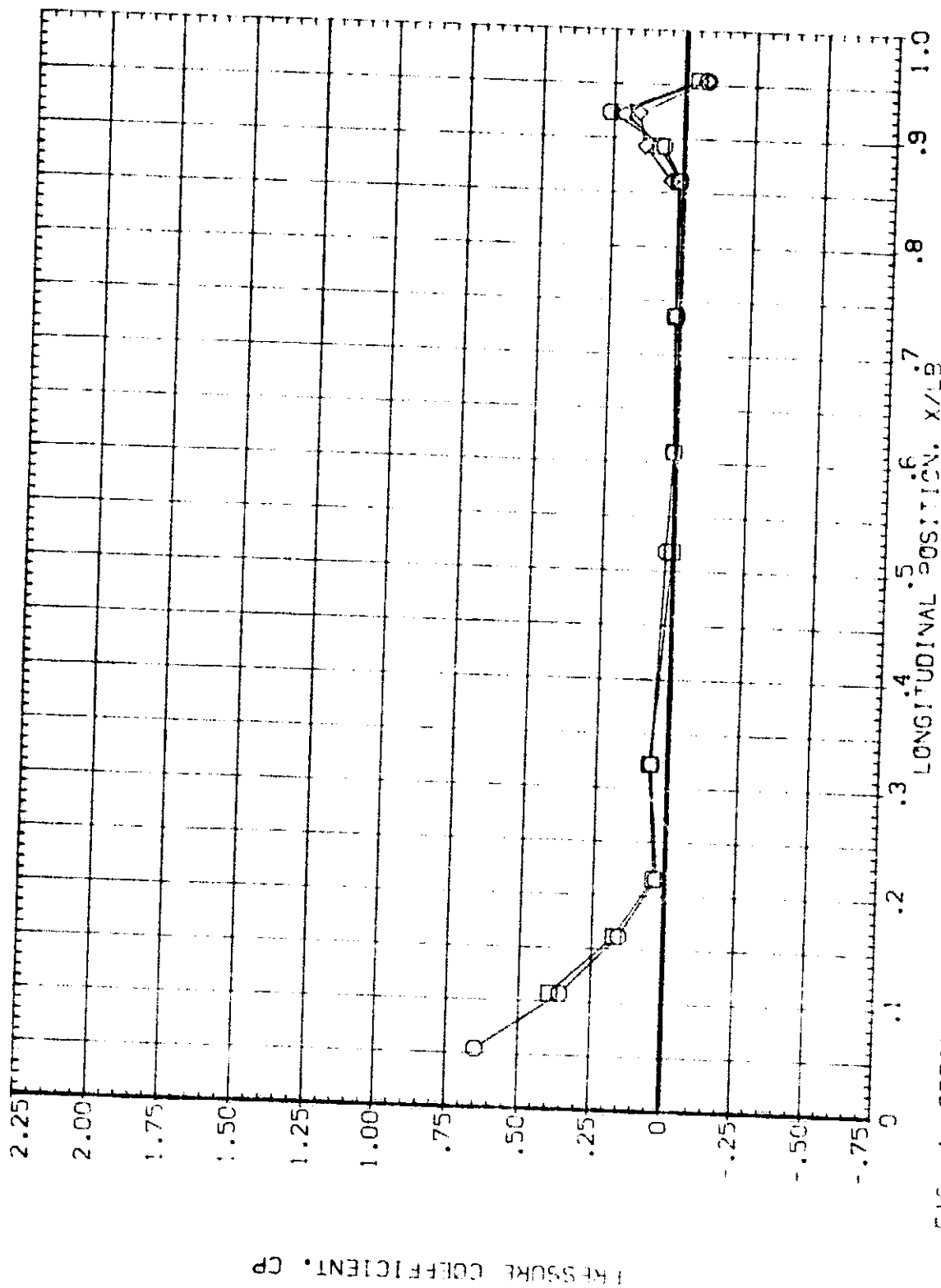


FIG. 4 PRESSURE DISTRIBUTION OVER ET - 11 MODEL WITH PROTUBERANCES

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (P1A081)

SYMBOL

THETA  
45.000  
57.500  
90.000

ALPHA  
-6.380

MACH  
3.480

BETA  
MCUNT

PARAMETRIC VALUES  
.000 .000 .000  
1.000 1.000 1.000  
PHI

.000  
45.000

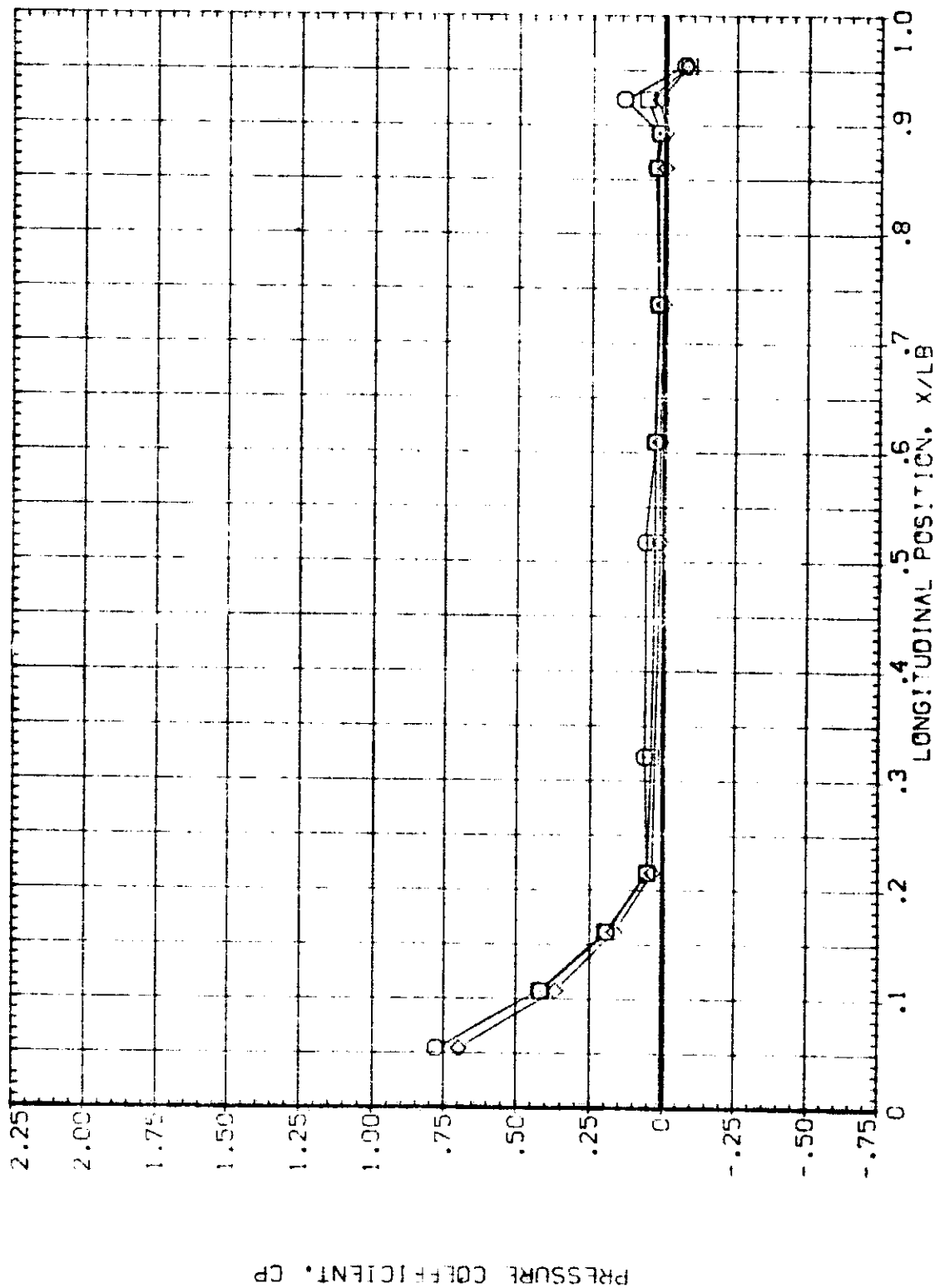


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA081)

SYMBOL  
□  
◇

THETA  
112.500  
135.000  
157.500

ALPHA  
-8.380

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI

.000  
45.000

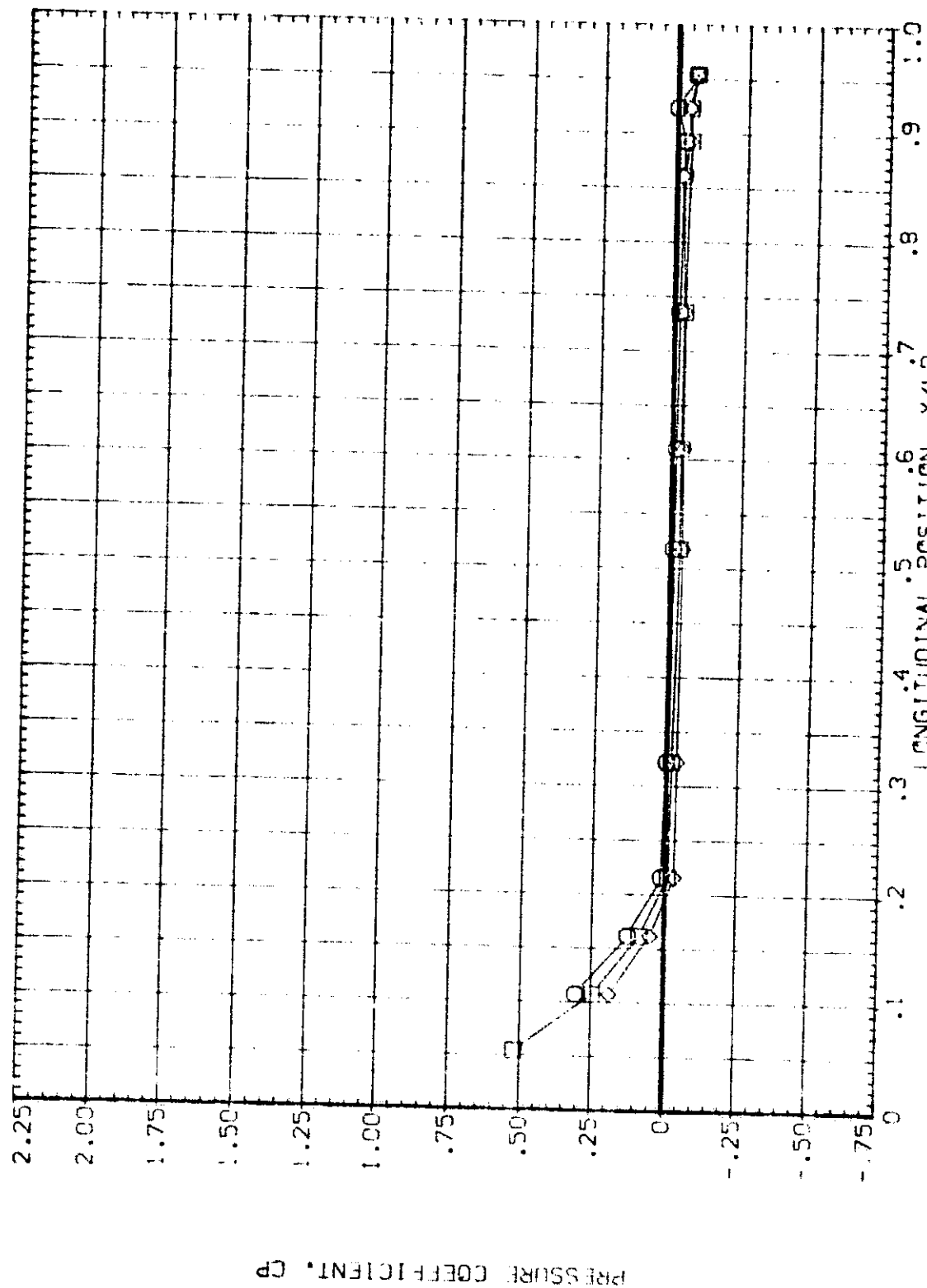


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A081)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 190.000  
 232.500  
 225.000

ALPHA  
 -8.380

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 PHI  
 45.000

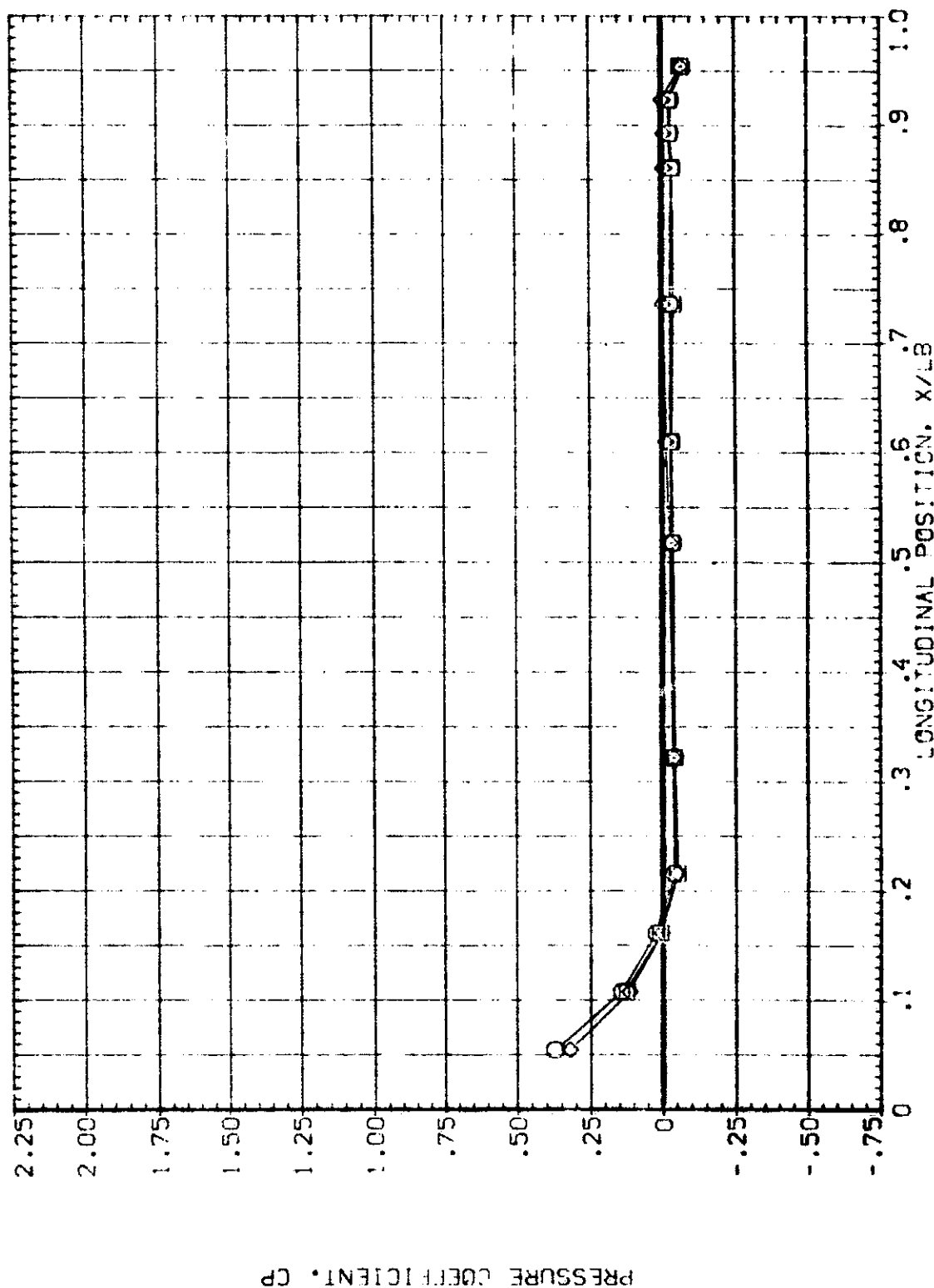


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA081)

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI 45.000

THETA 247.500  
 ALPHA -8.380  
 MACH 3.480

SYMBOL  
 247.500  
 270.000  
 292.500

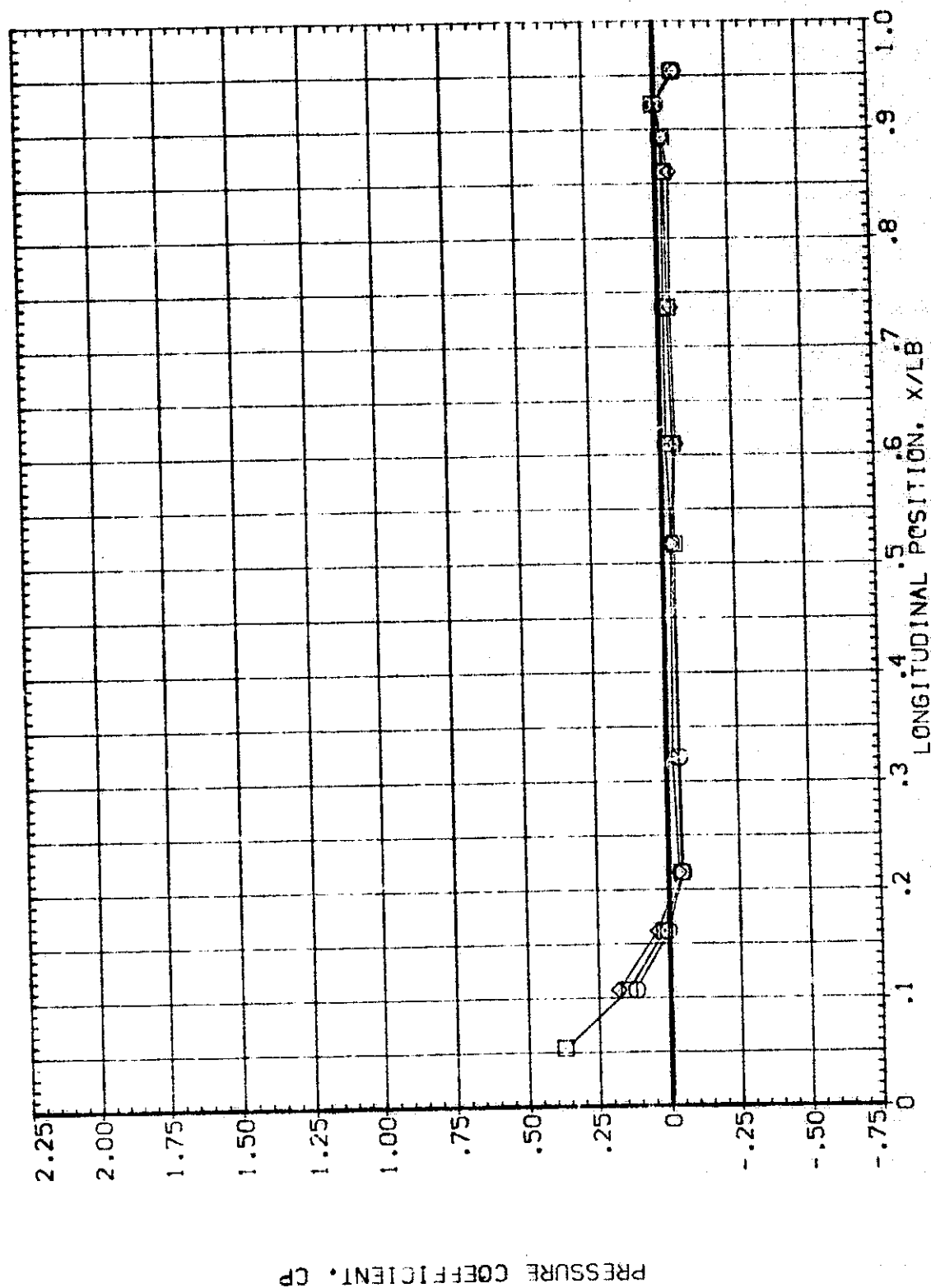


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 -8.380

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 45.000  
 OFFSET  
 PHI

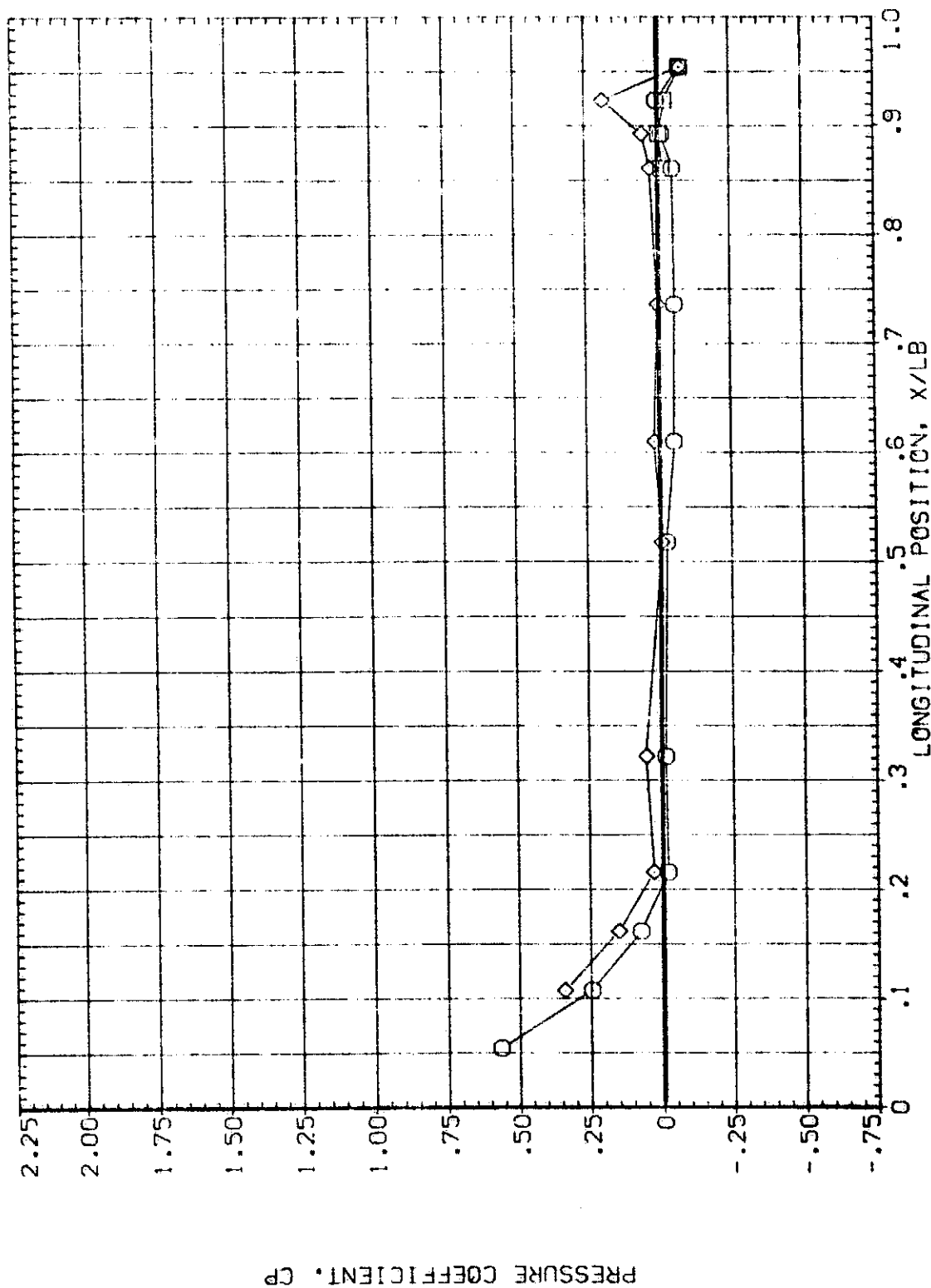


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A082)

SYMBOL  
 ○  
 □  
 ◇

THETA .000  
 14.000  
 24.000  
 ALPHA -4.330  
 MACH 3.460

BETA  
 MOUNT  
 PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI  
 .000  
 45.000

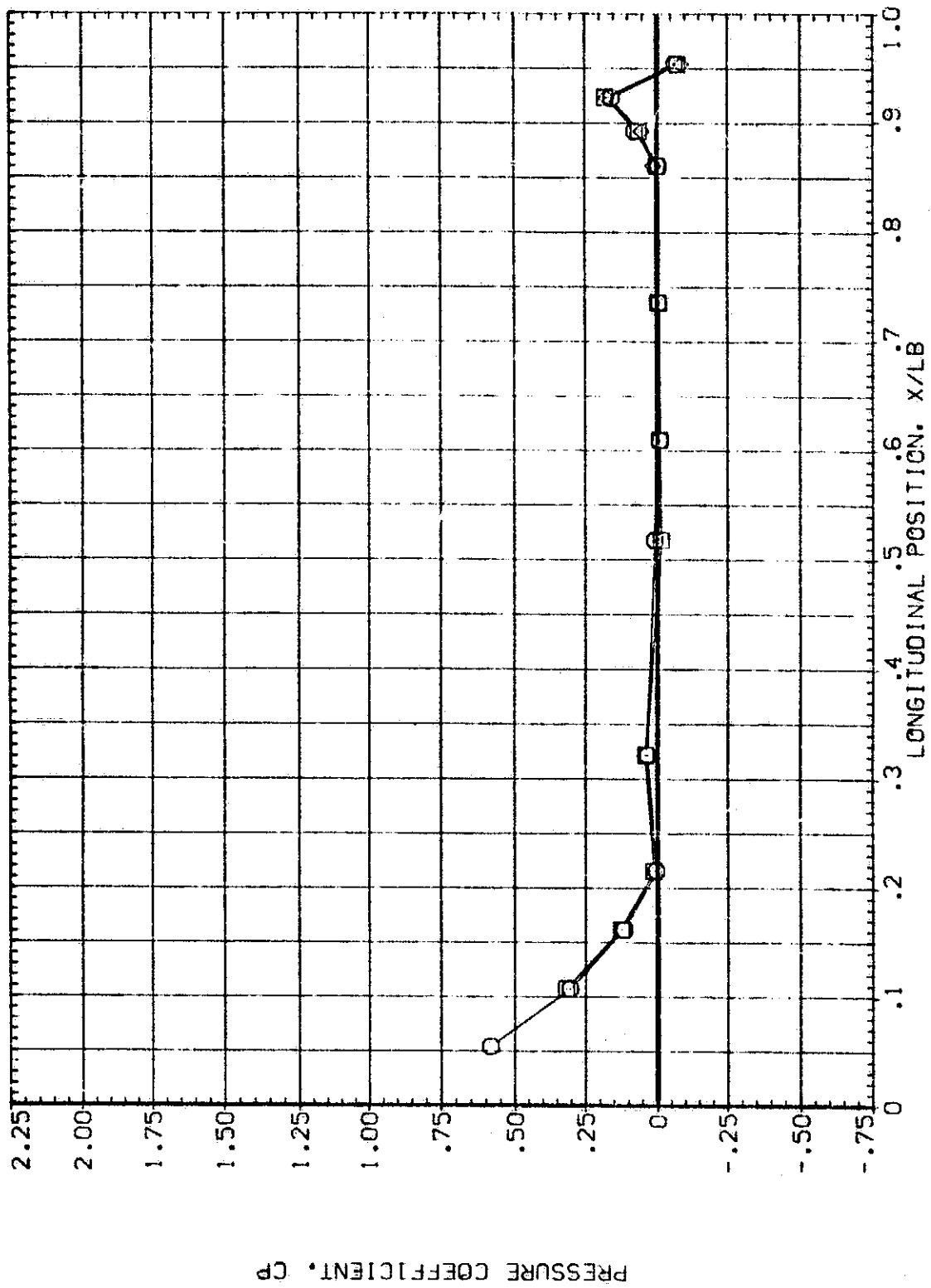


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A082)

SYMBOL  
 ◇  
 □  
 ○

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 -4.330

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 PHI

.000  
 45.000

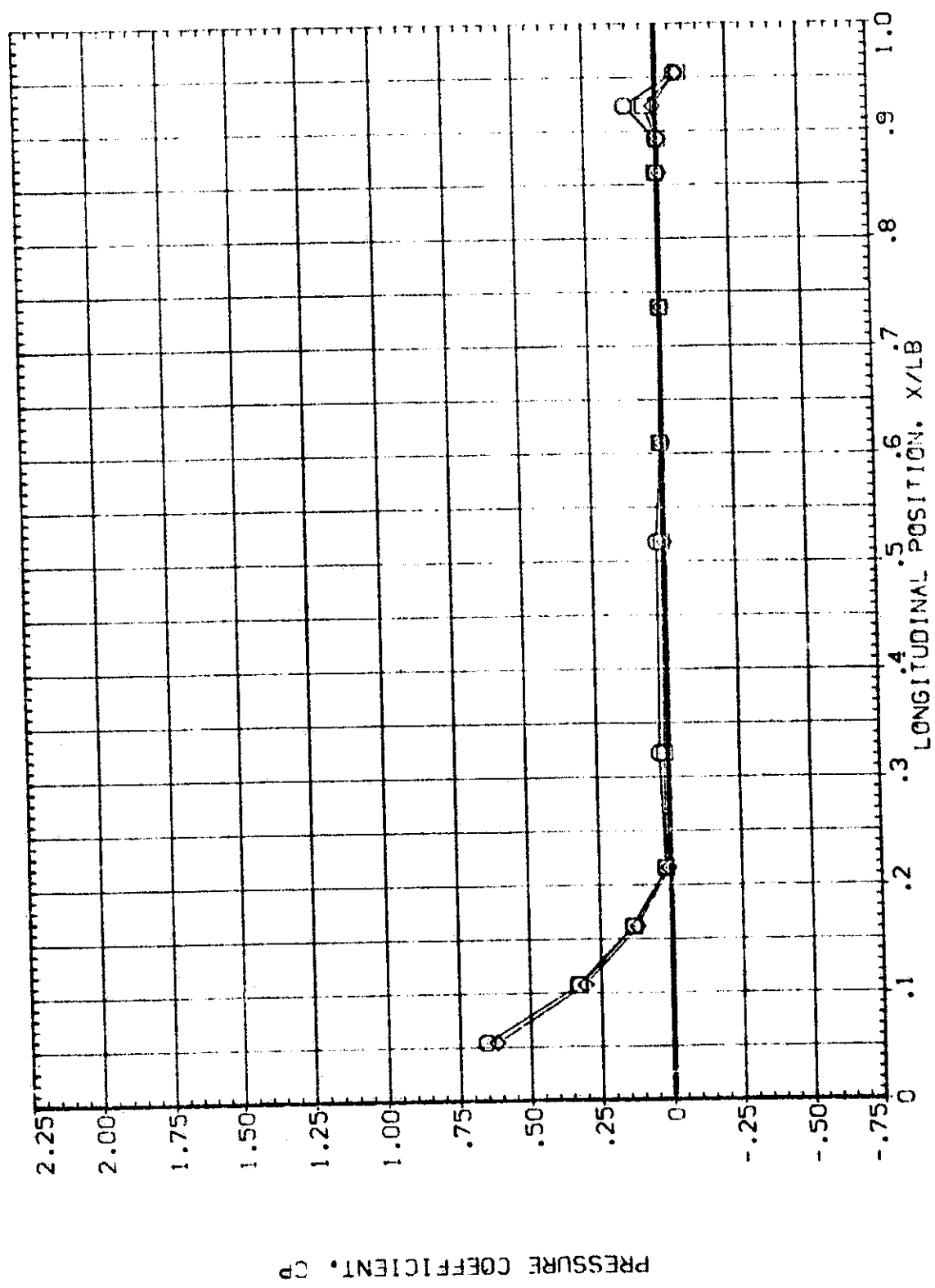


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A082)

SYMBOL	THETA		ALPHA		MACH		BETA		PARAMETRIC VALUES	
	112.500	135.000	157.500	-4.330	3.480		MOUNT	.000	OFFSET	.000
○								1.000	PHI	45.000
□										
◇										

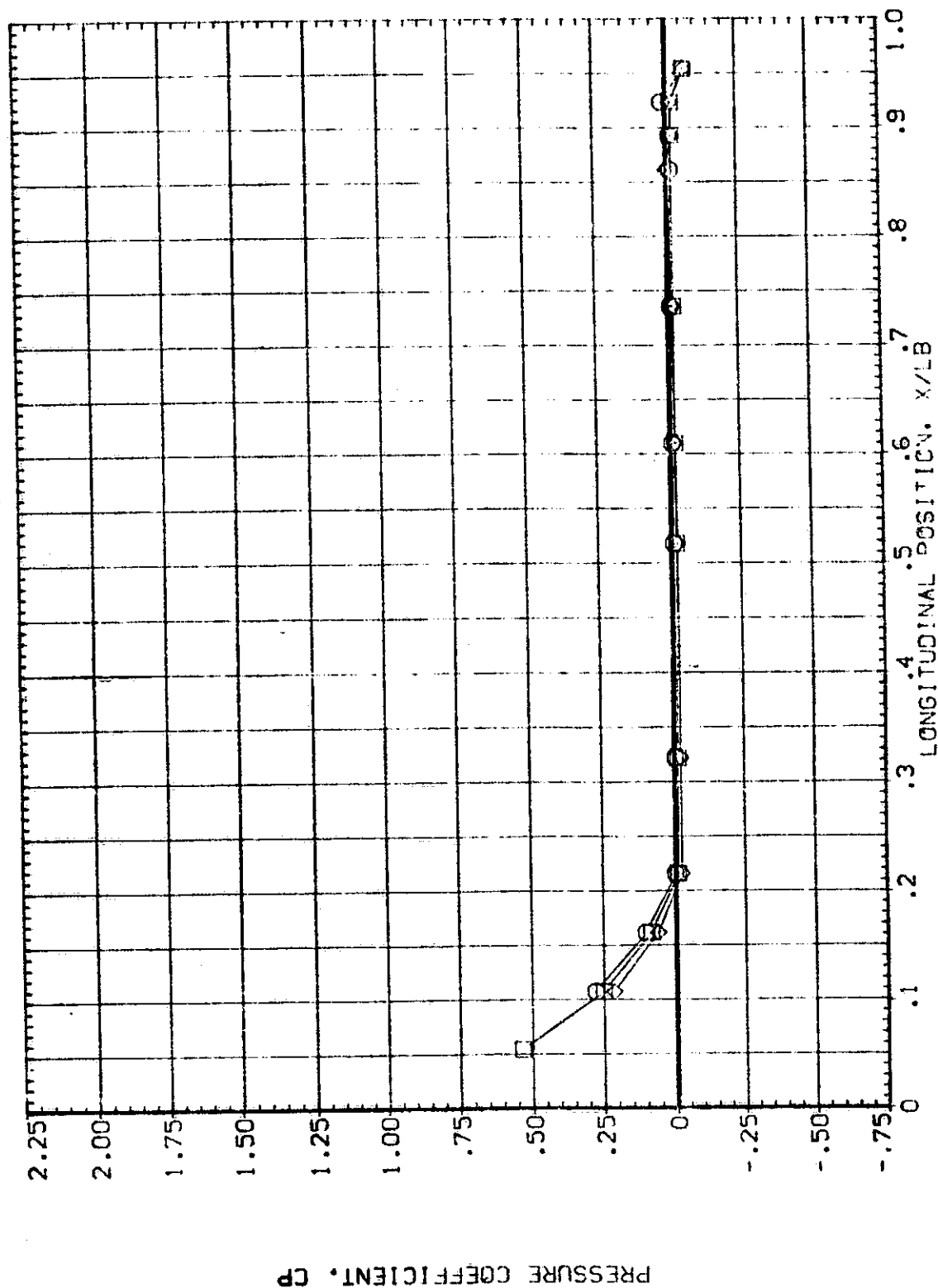


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA082)

SYMBOL  
 □  
 ◇

THETA  
 180.000  
 232.500  
 225.000

ALPHA  
 -4.330

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 PH

.000  
 45.000

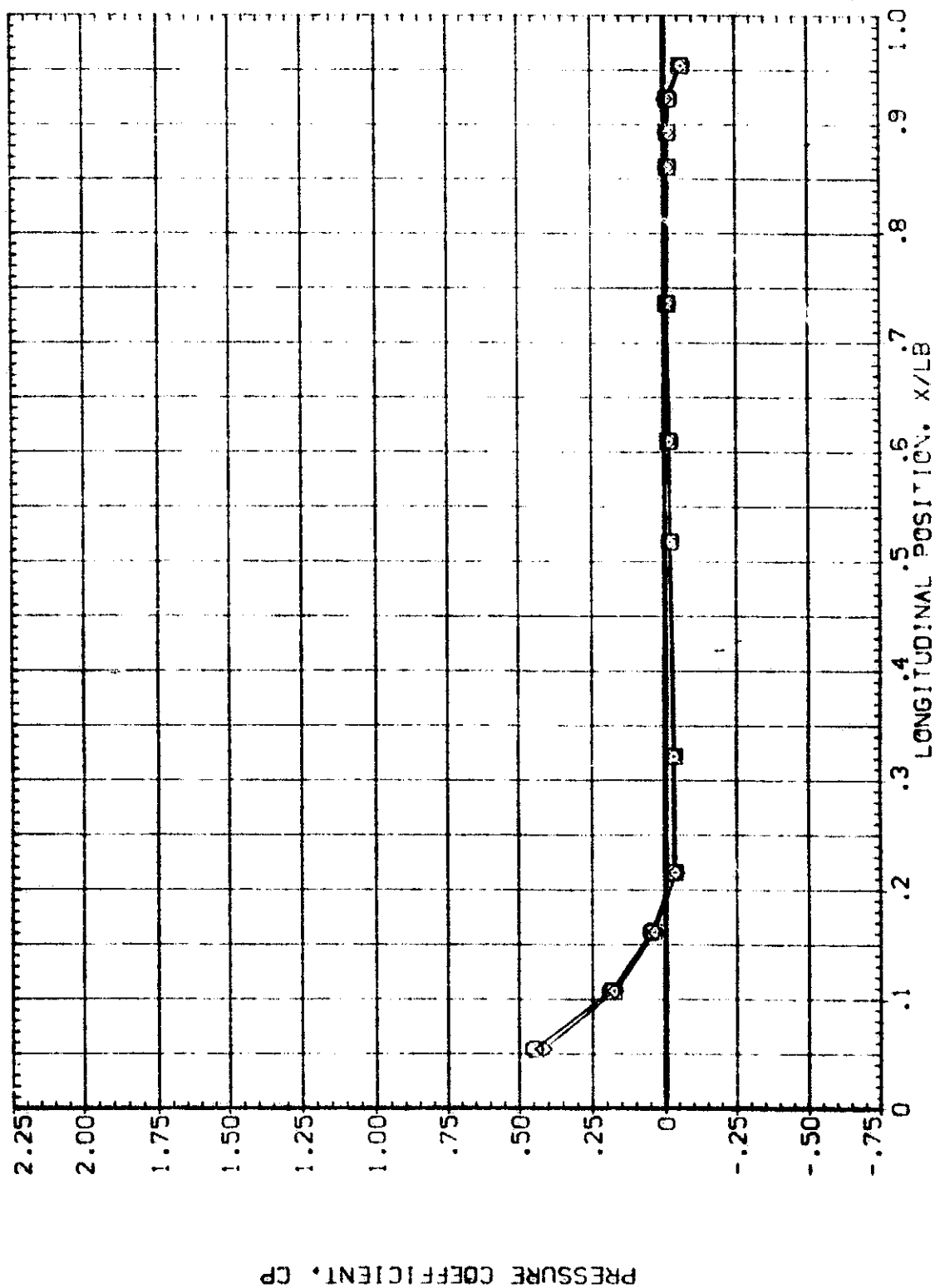


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA082)

SYMBOL  
 □  
 ◇

THETA  
 247.500  
 270.000  
 292.500

ALPHA  
 -4.330

MACH  
 3.480

BETA  
 .000  
 .000  
 .000

PHI  
 1.000  
 1.000  
 45.000

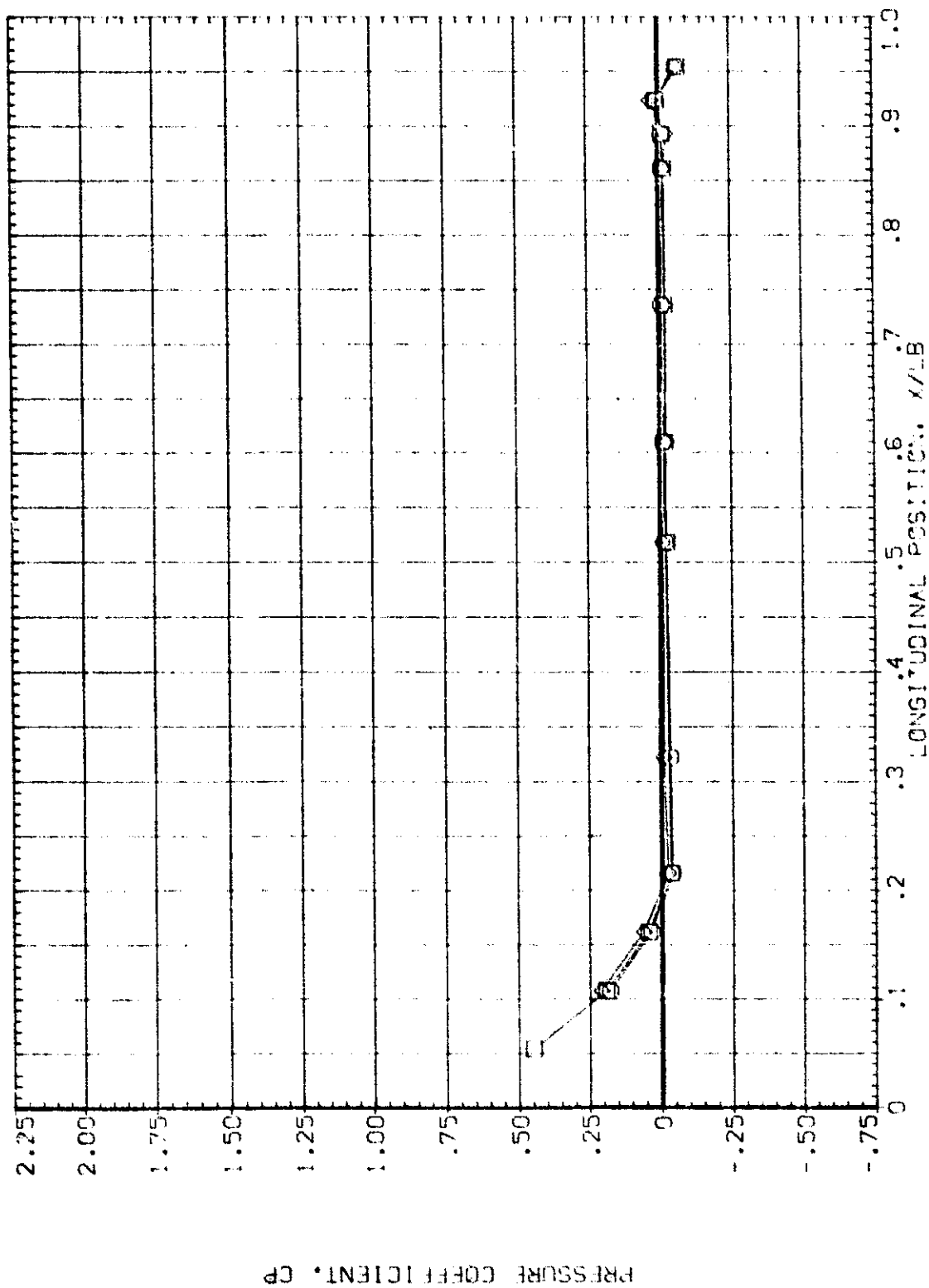


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(PIA082)

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
-4.330

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT  
1.000  
PHI  
45.000

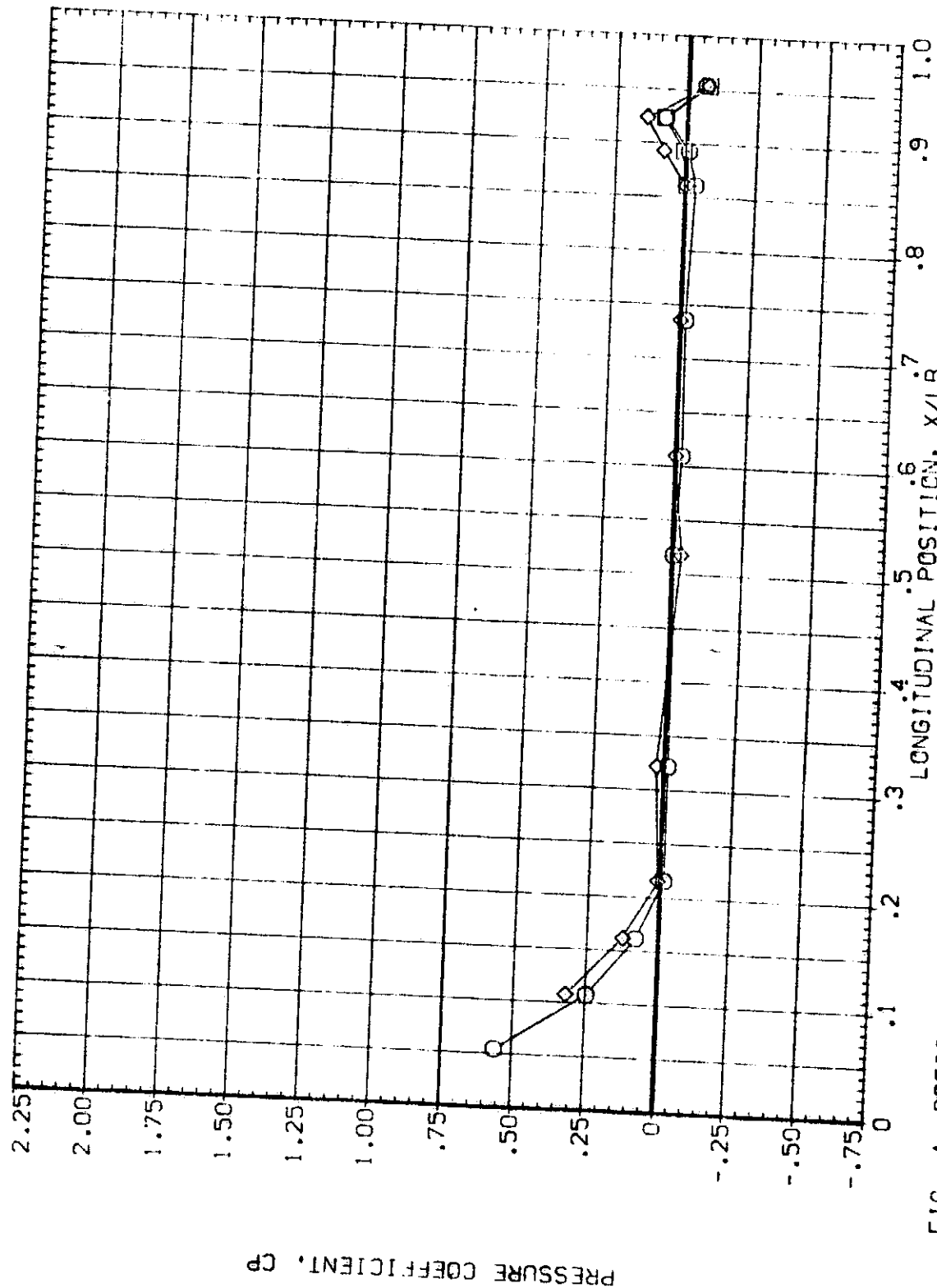


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 586 (IA-2F) MICRO200 EXTERNAL TANK. T1

(P1A083)

SYMBOL

THE TA  
14.000  
24.000

ALPHA  
-.280

**3.480**  
**MACH**

1. NUMBER  
V 136

PARAMETRIC VALUES

1353.30  
OFFSET

**Phil**

45.000  
1.000

45.

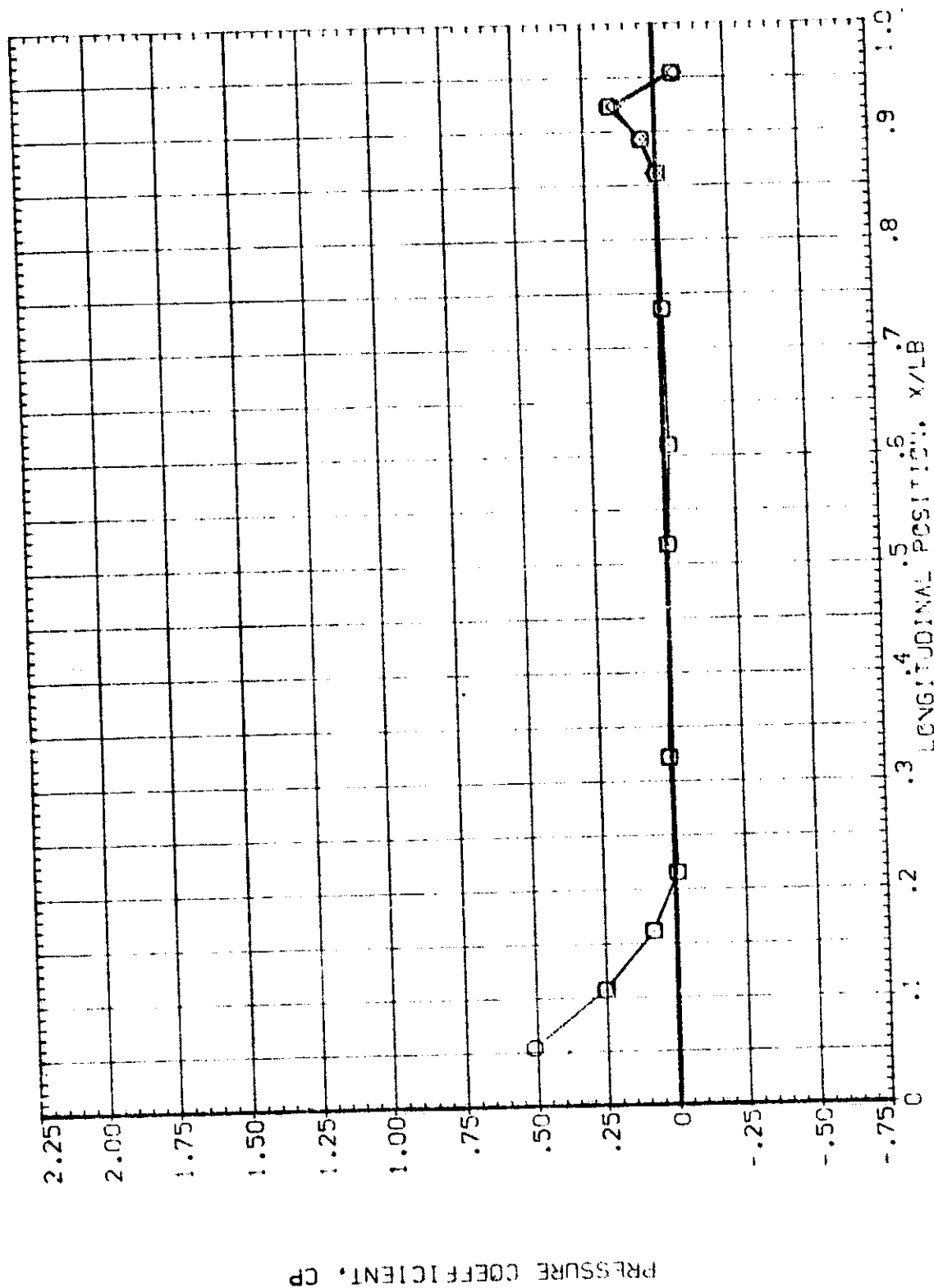


FIG. 4. PRESSURE DISTRIBUTION OVER ET-11 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A083)

SYMBOL

THETA  
45.000  
57.500  
90.000

ALPHA  
-.280

MACH  
3.480

PARAMETRIC VALUES  
.000  
1.000  
PHI

BETA  
MOUNT  
45.000

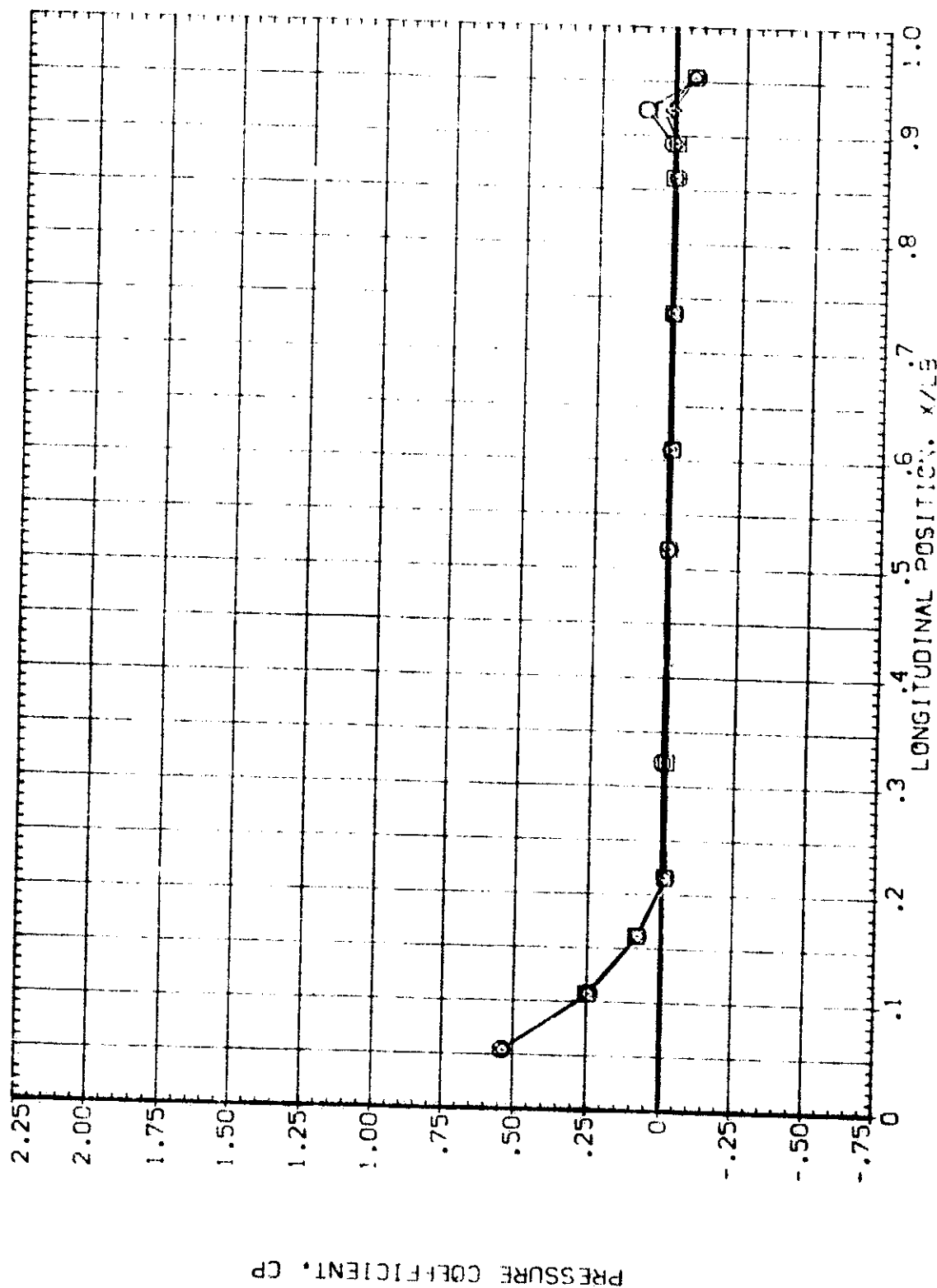


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES





MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL

THETA  
112.500  
135.000  
137.500

ALPHA  
-.280

MACH  
3.480

(P1A083)

PARAMETRIC VALUES  
BETA .000  
MOUNT 1.000  
PHI .000  
45.000

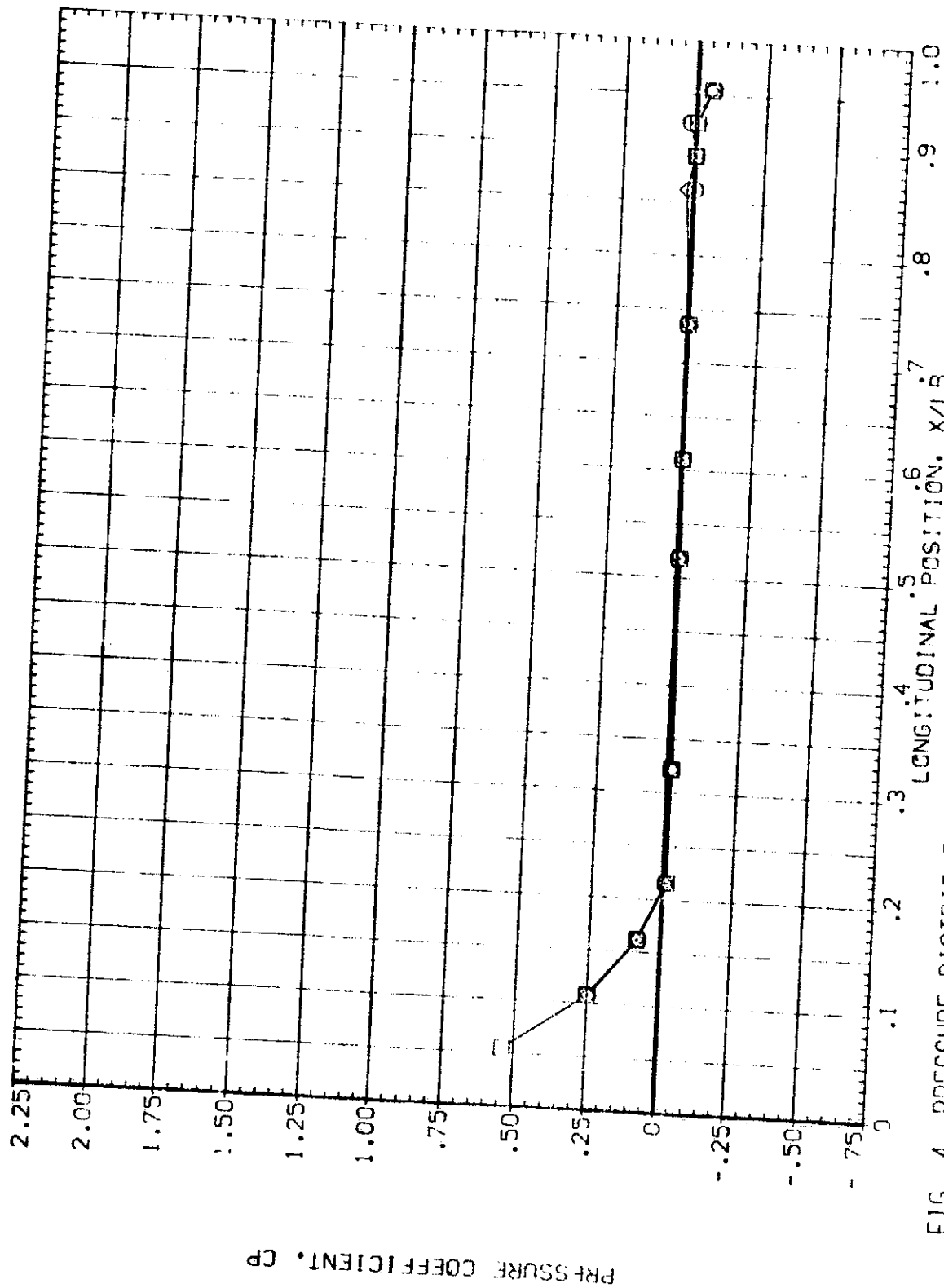


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH DISCREPANCIES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A083)

SYMBOL  
 190.000  
 232.500  
 225.000

THETA  
 ALPHA  
 - .280

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 PH1

.000  
 45.000

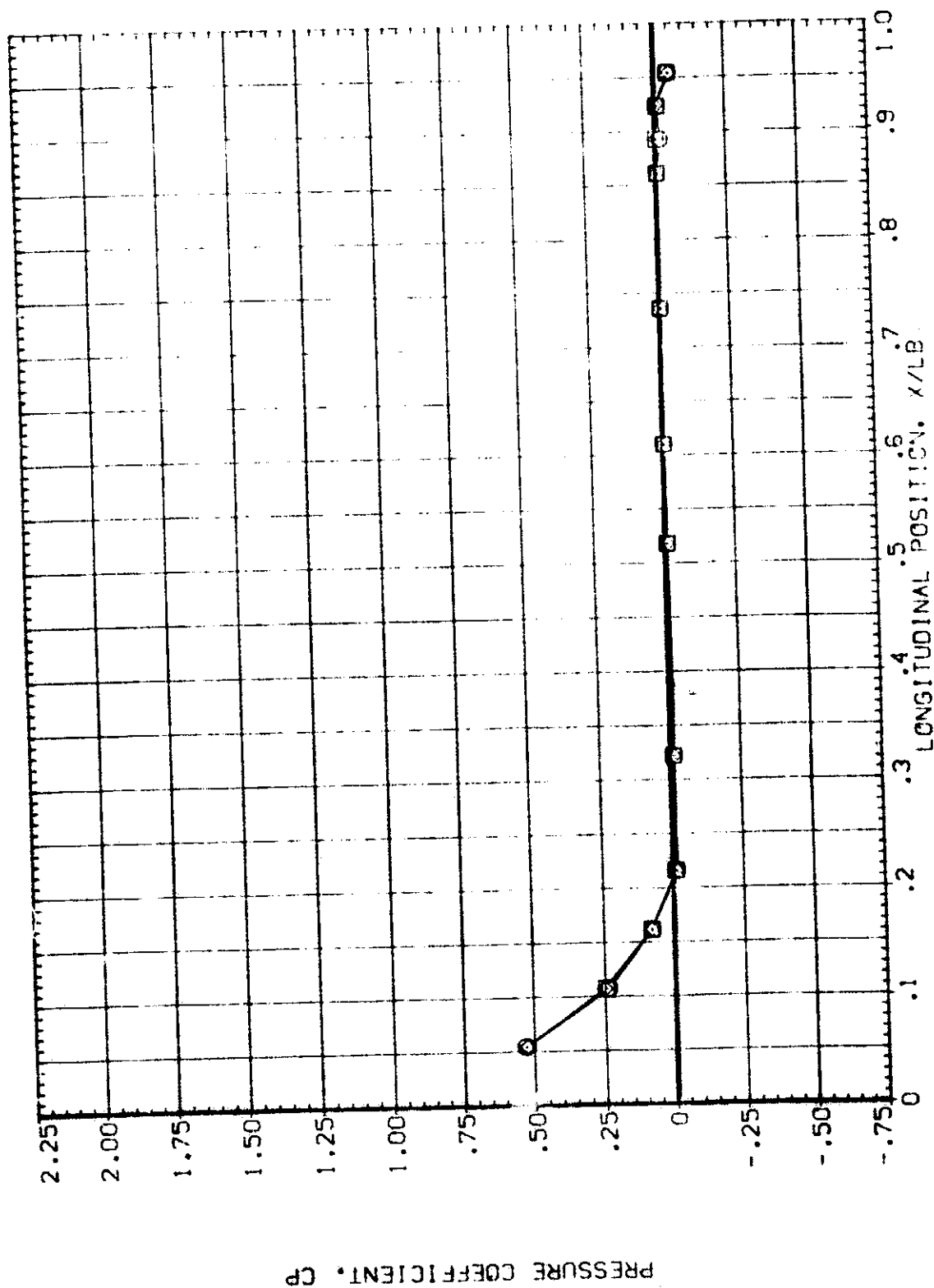


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUDANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1

(P1A083)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
-.280

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT  
1.000  
1.000  
PHI  
45.000

.000  
45.000

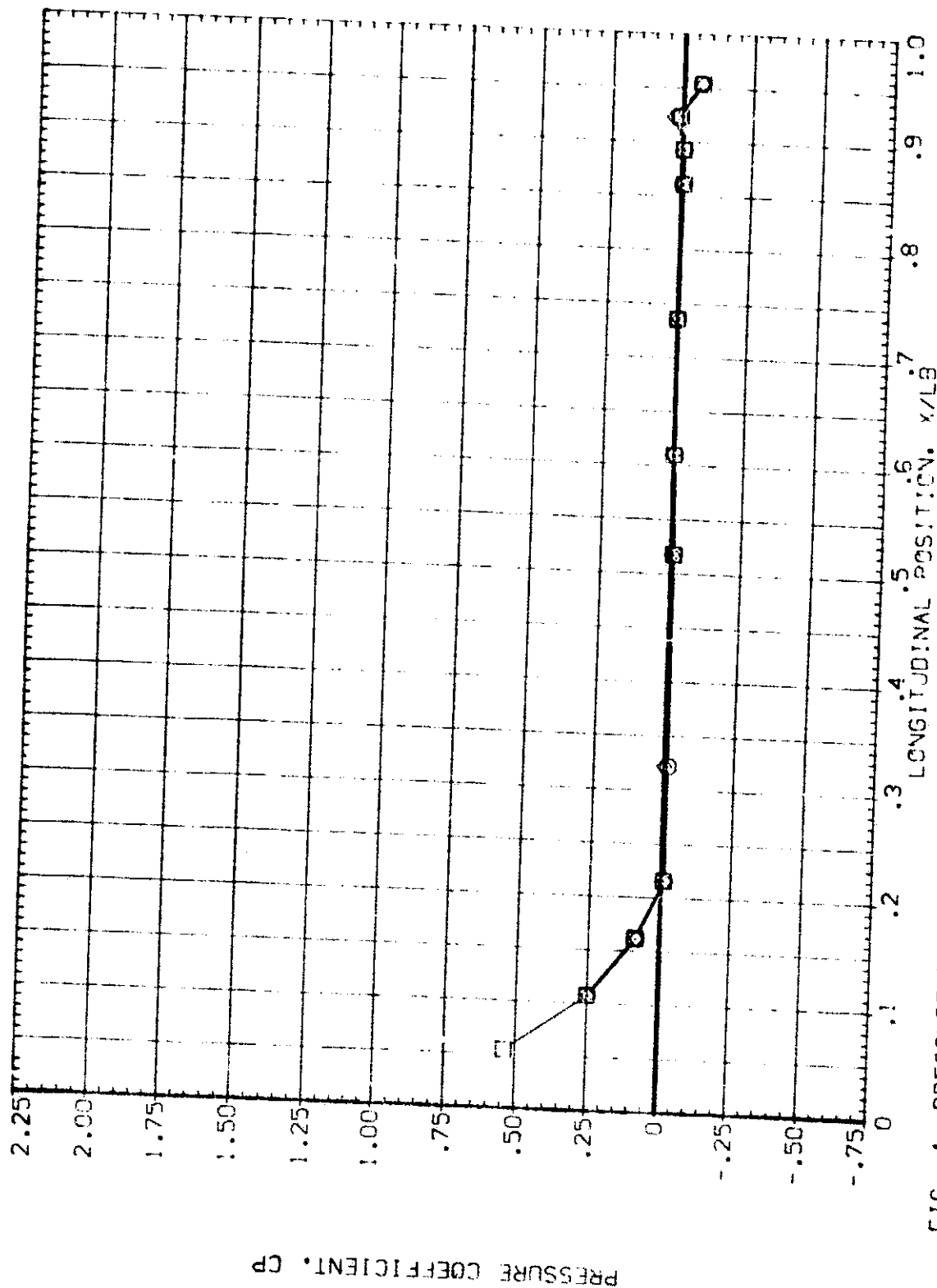


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A083)

SYMBOL    YTHETA    ALPHA    MACH  
 ○    315.000    -.280    3.480  
 □    326.000  
 ◇    346.000

PARAMETRIC VALUES  
 BETA    .000    OFFSET    .000  
 MOUNT    1.000    PHI    45.000

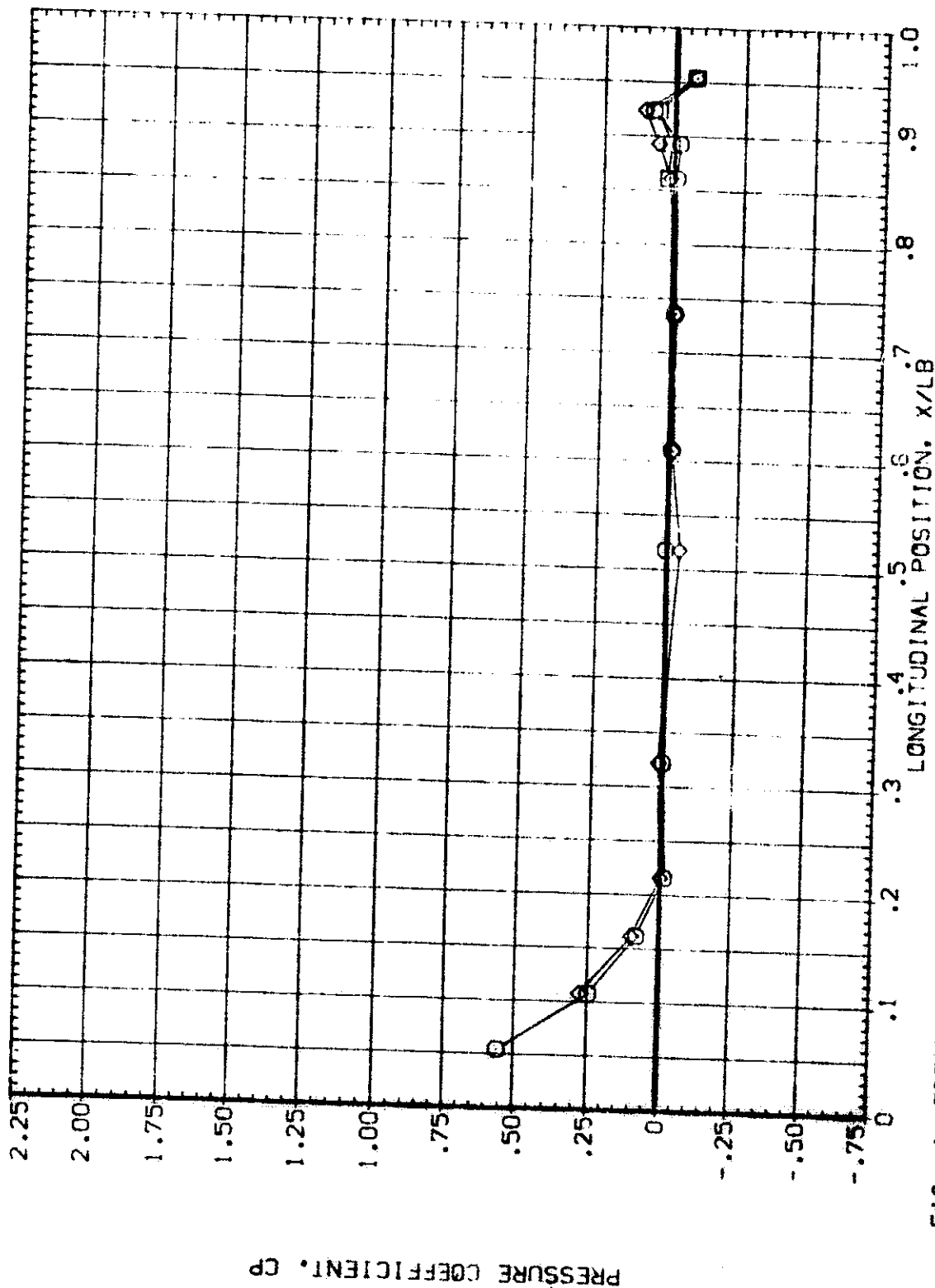


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA084)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	.000	14.000	3.770	3.480	BETA	HSUNT	.000	OFFSET	.000	PHI
◇							1.000		45.000	
□										
○										

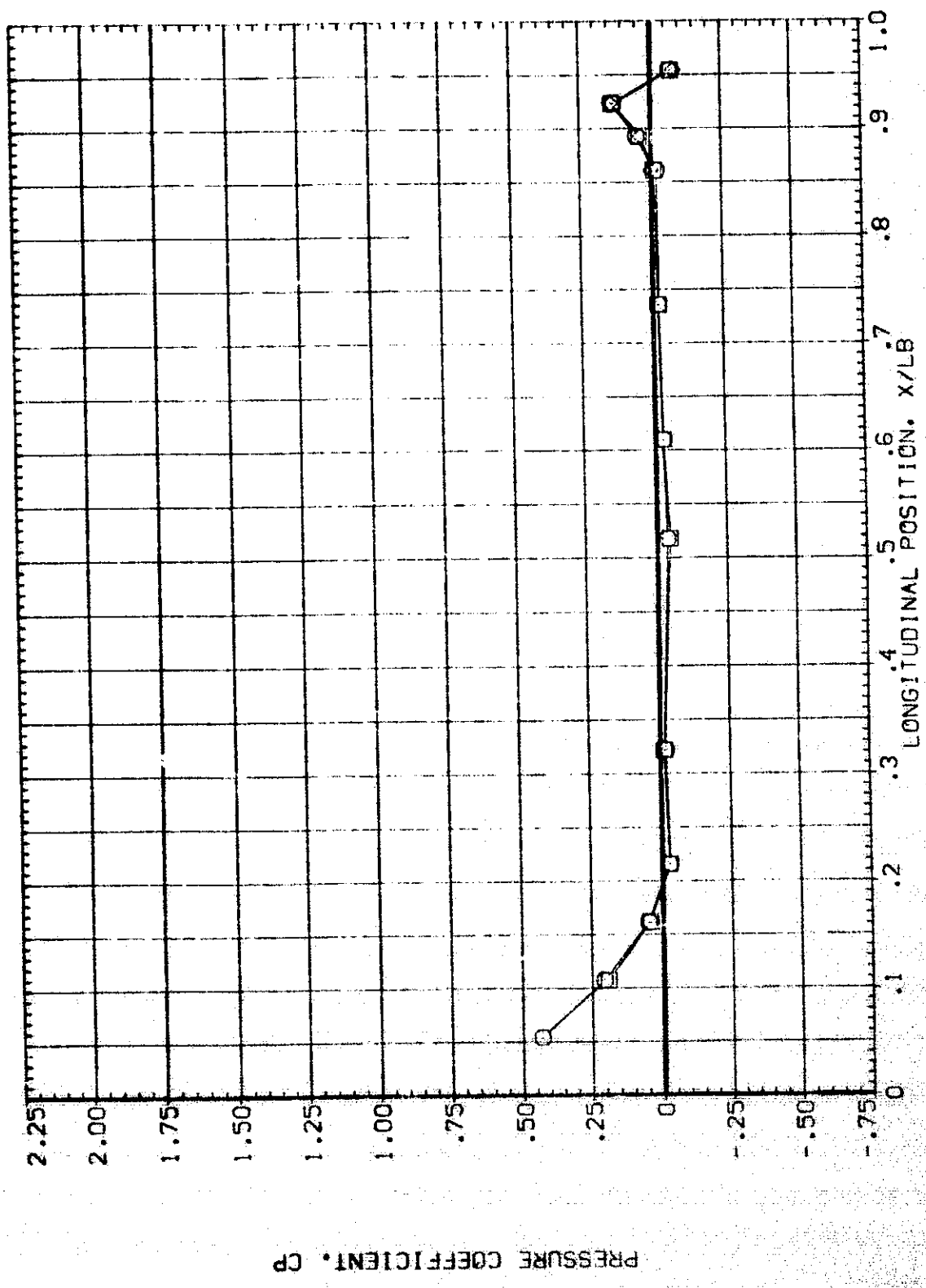


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A084)

SYMBOL  
○  
□  
◇

THETA  
45.000  
67.500  
90.000

ALPHA  
3.770

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

.000  
45.000

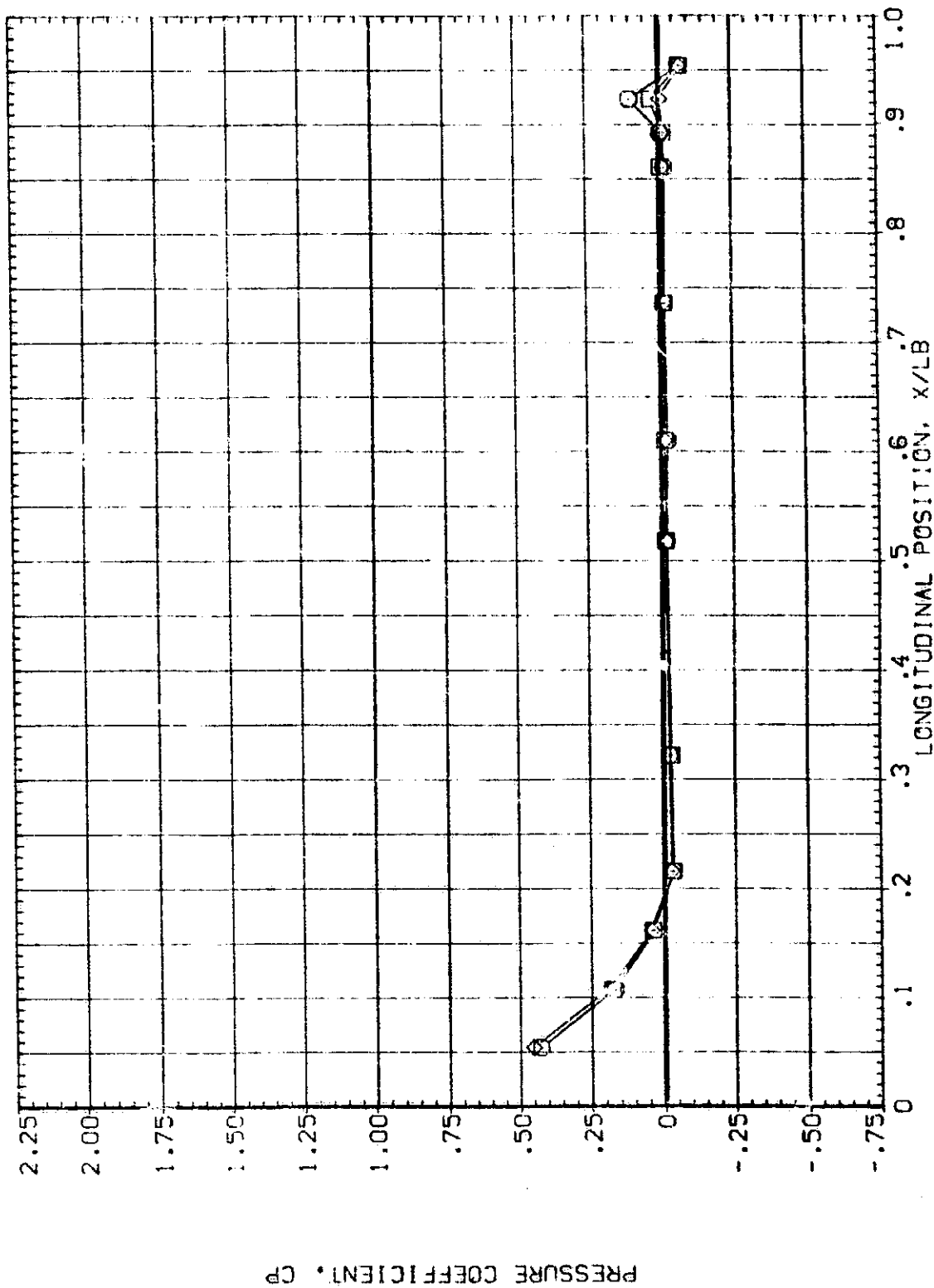


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA084)

SYMBOL  
□  
◇

THETA  
112.500  
135.000  
157.500

ALPHA  
3.770  
MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT  
1.000  
PHI  
45.000  
OFFSET  
.000

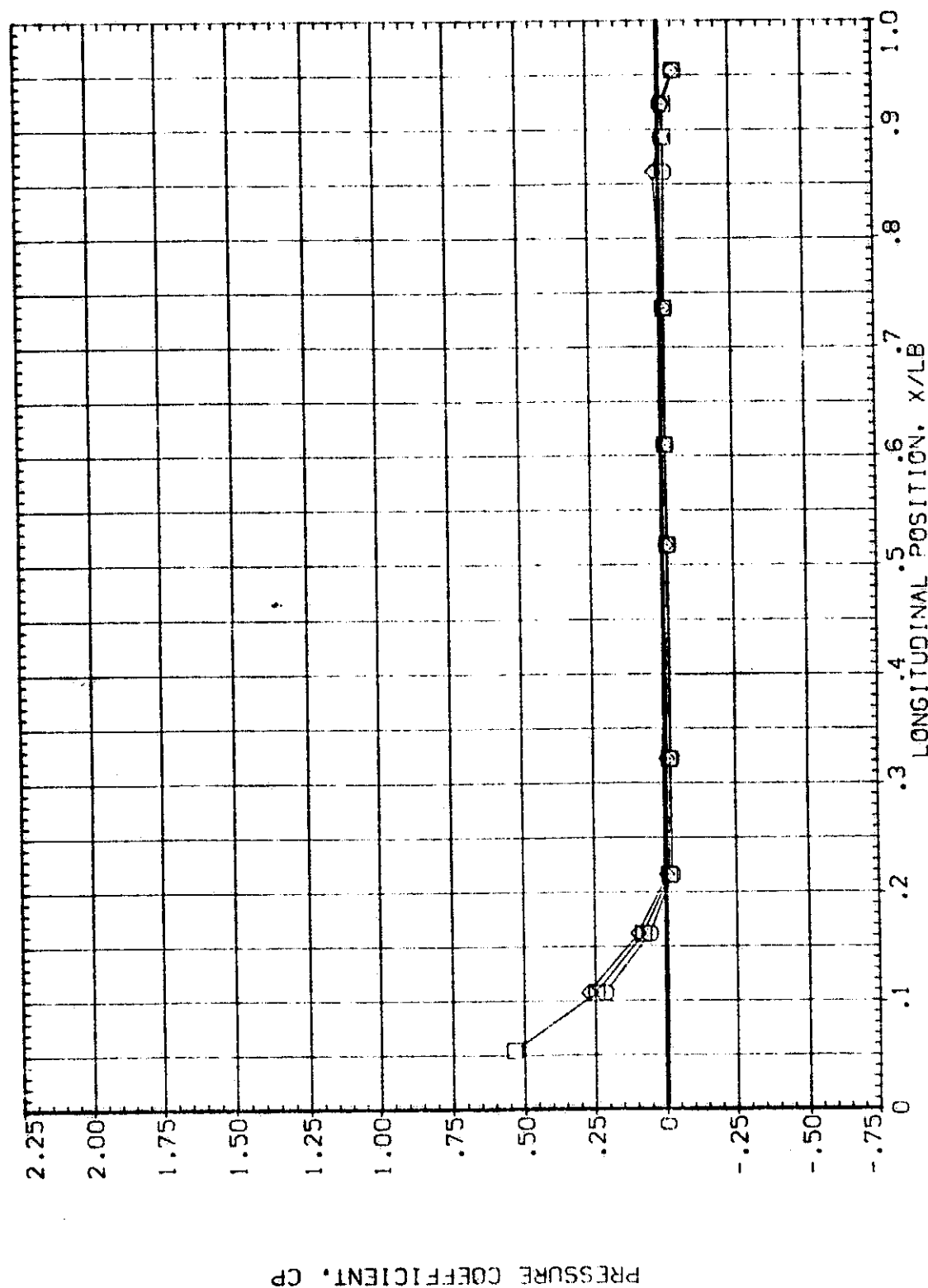


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA084)

SYMBOL  
 □  
 ◇

THETA 180.000  
 222.500  
 225.000

ALPHA 3.770

MACH 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 PHI  
 45.000

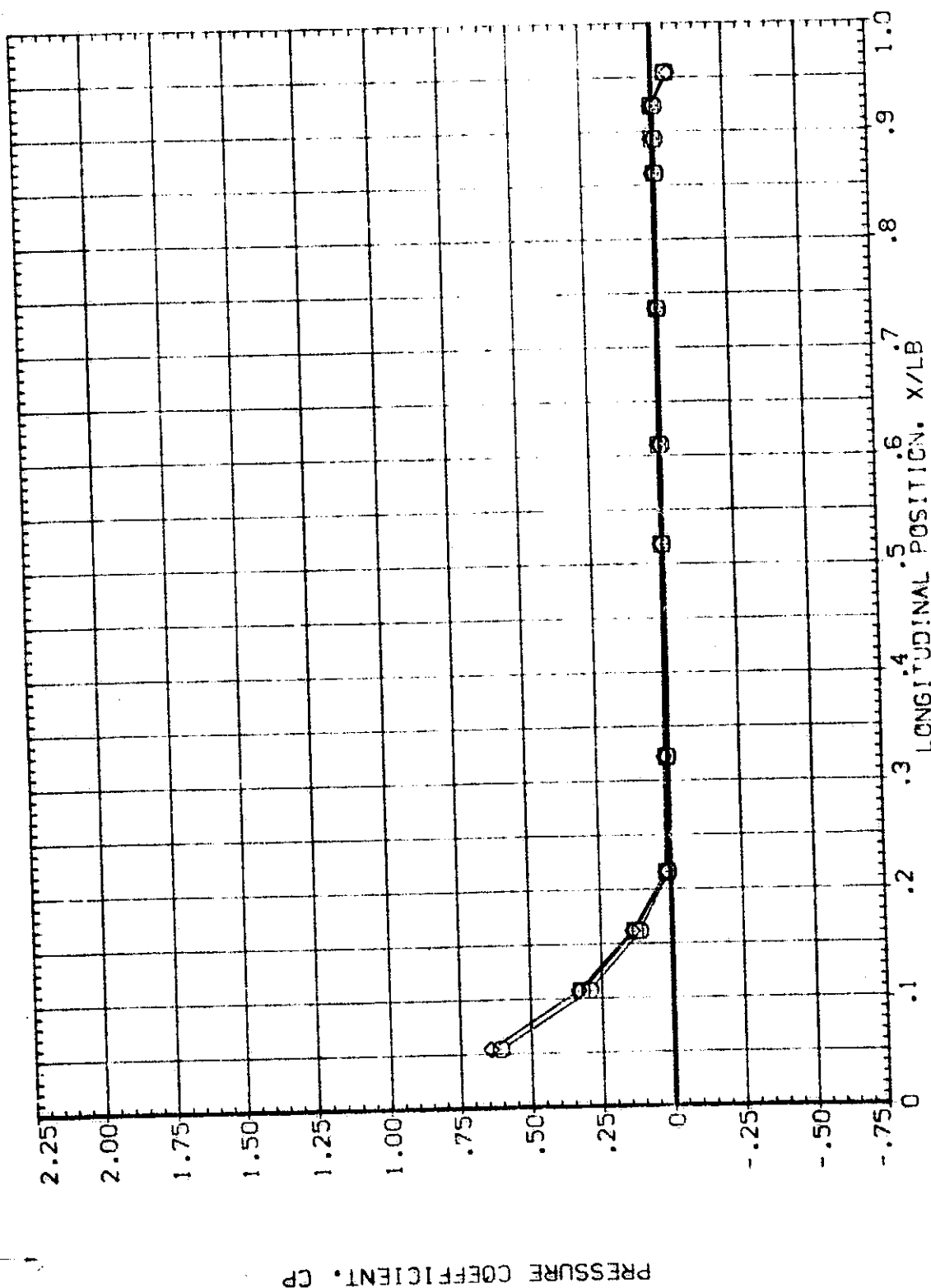


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES





MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A084)

SYMBOL  
◇  
□  
○

THETA  
247.500  
270.000  
292.500

ALPHA  
3.770

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES

.000  
1.000  
OFFSET  
PHI  
45.000

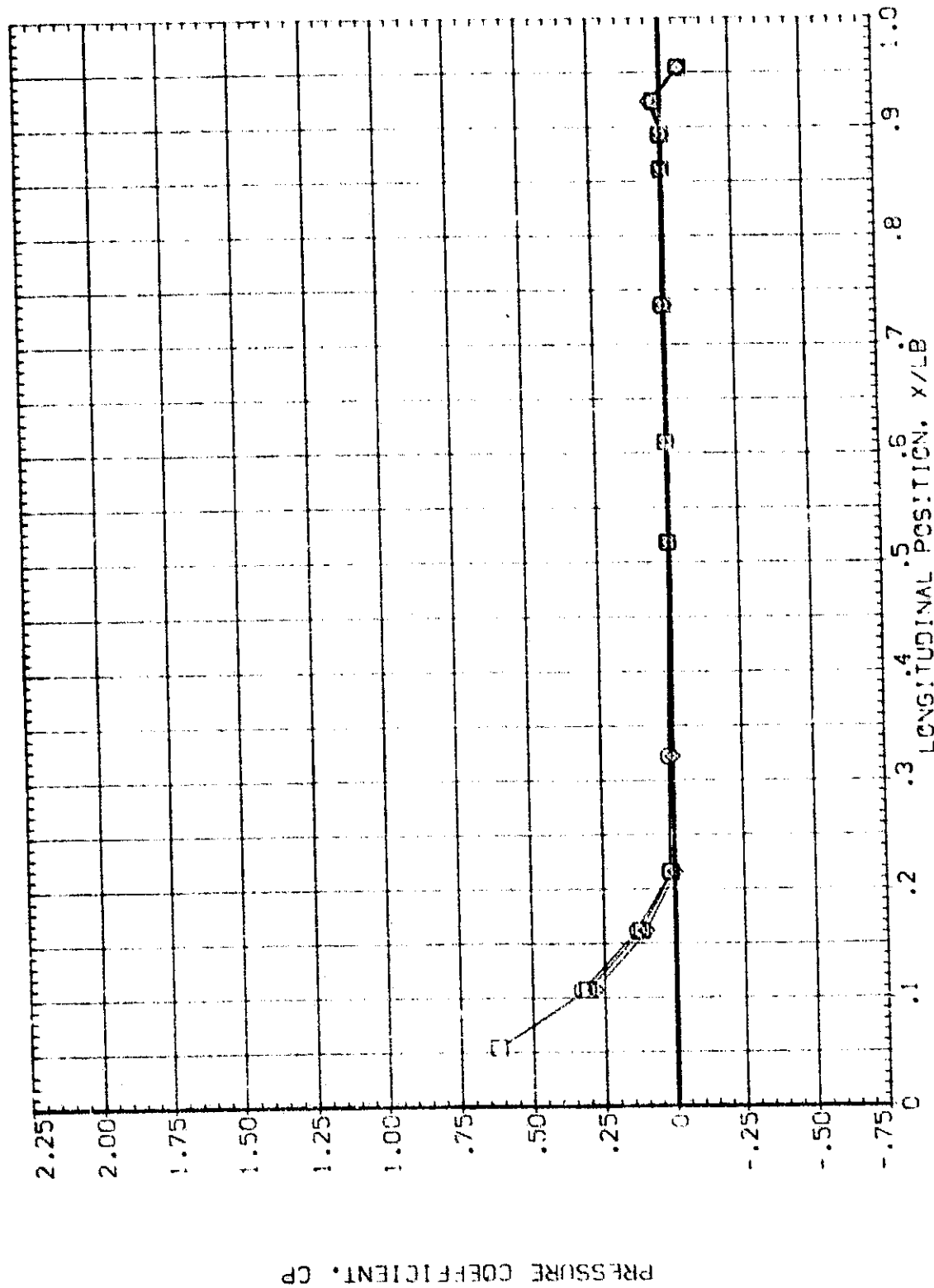


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○ □ ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 3.770

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 PH1

.000  
 45.000

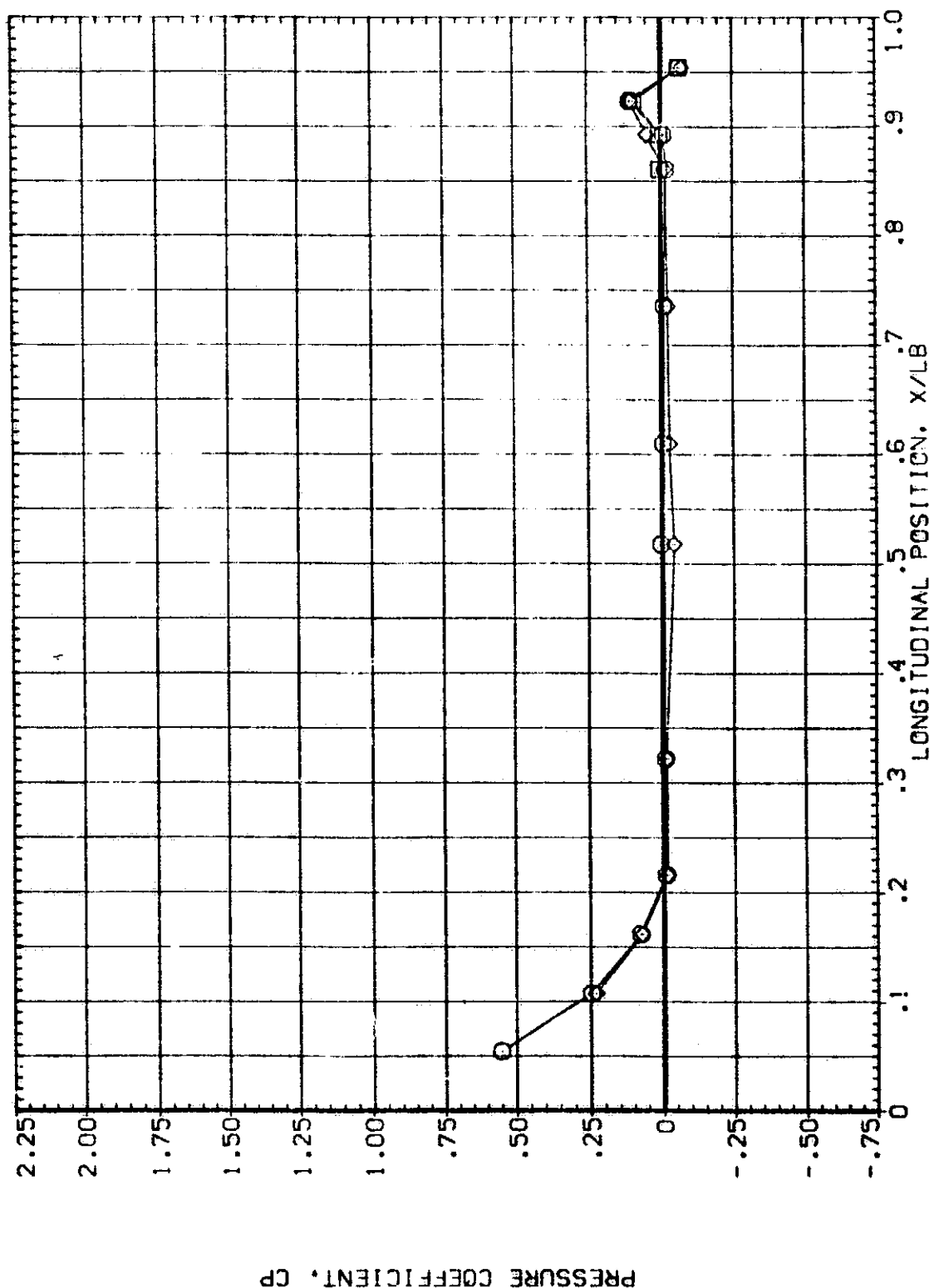


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

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 ORIGINAL PAGE IS POOR



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA085)

SYMBOL

THETA  
.000  
14.000  
24.000

ALPHA  
7.800

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000  
PHI

.000  
45.000

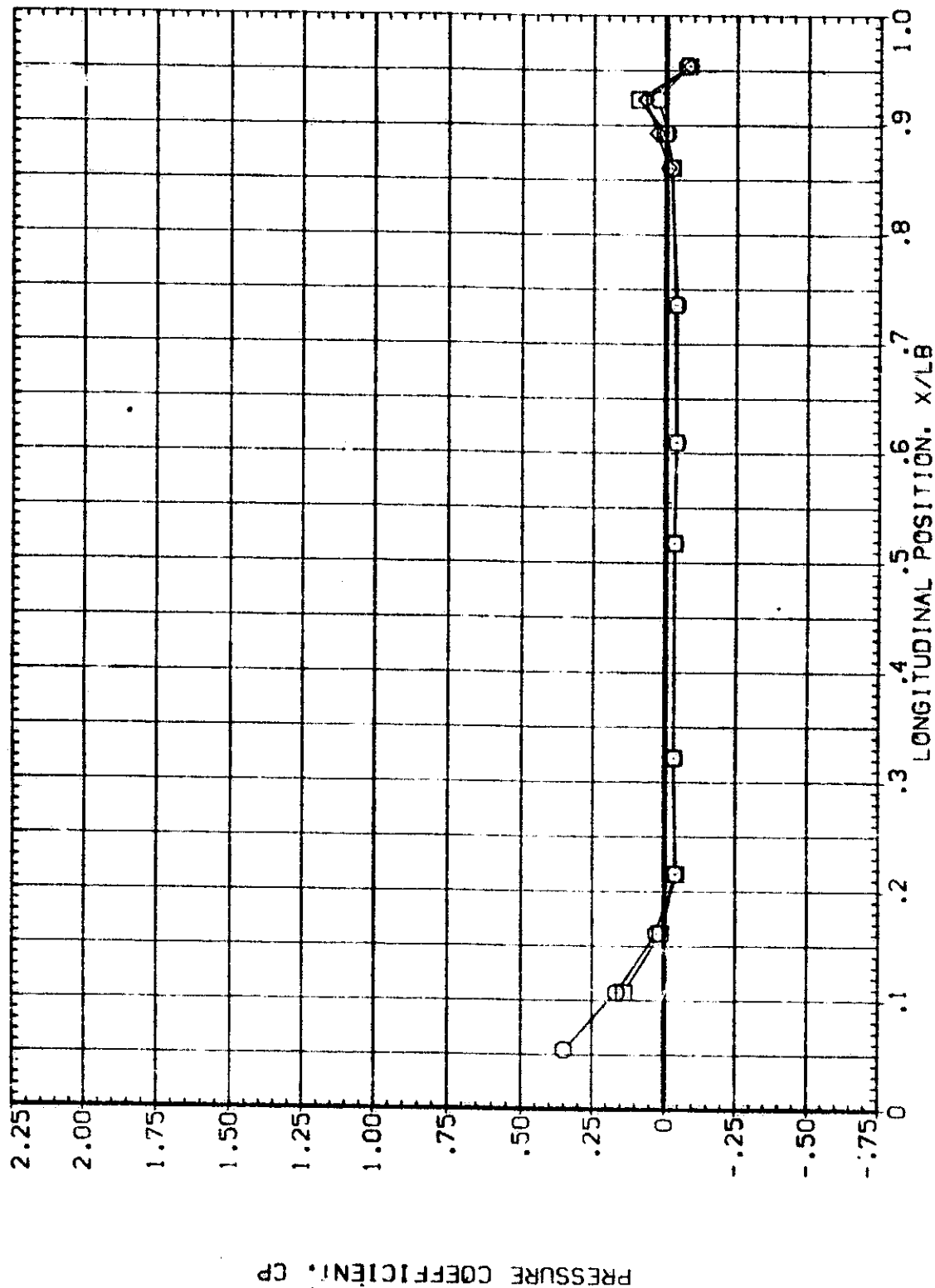


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 57.500  
 90.000

ALPHA  
 7.800

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 PH1  
 45.000

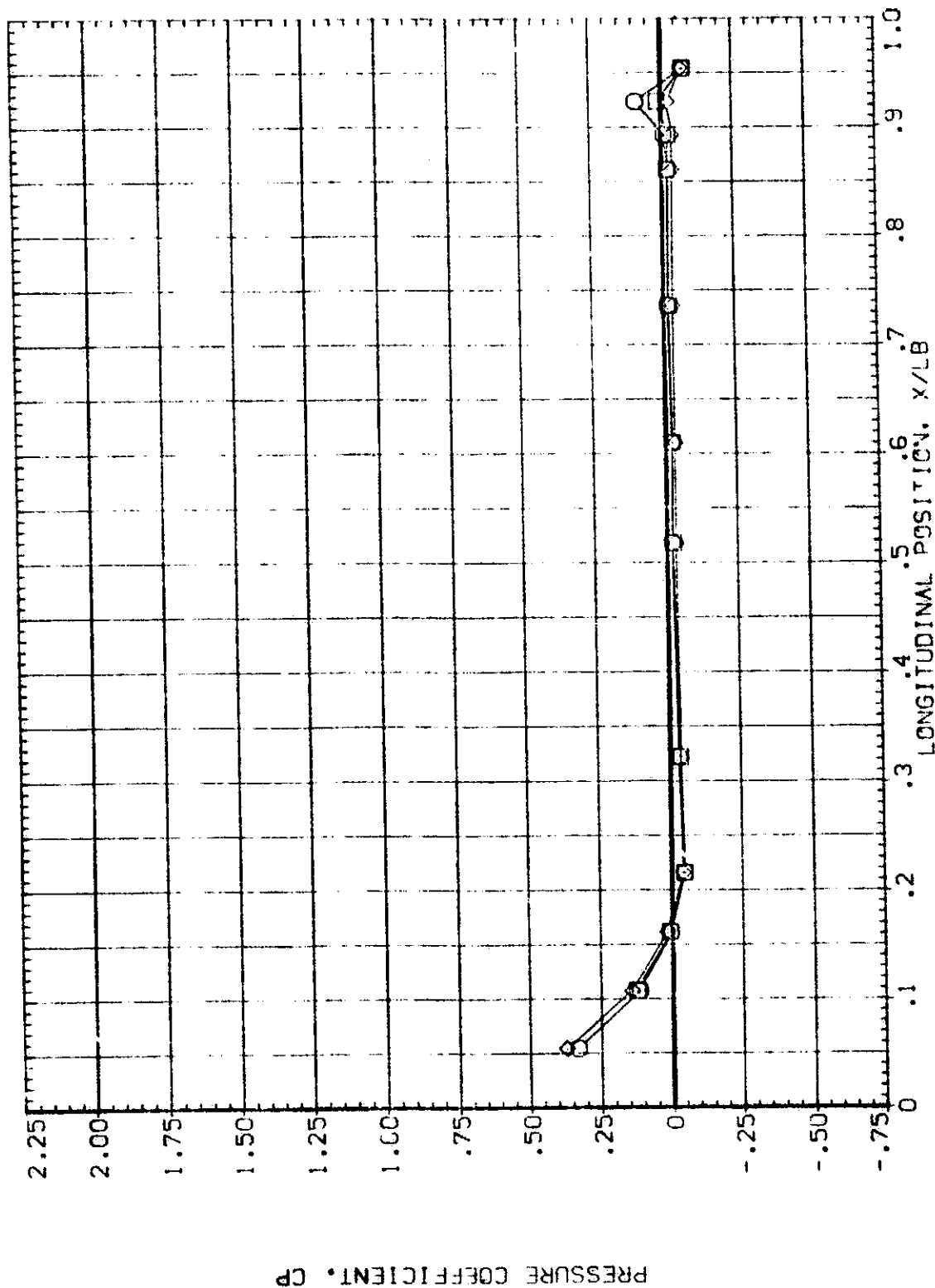


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A085)

SYMBOL	THETA	ALPHA	MAC	BETA	PARAMETRIC VALUES		
					1.000	.000	.000
□	112.500	7.800	3.480	MOUNT	1.000	PHI	45.000
◇	135.000						
△	157.500						

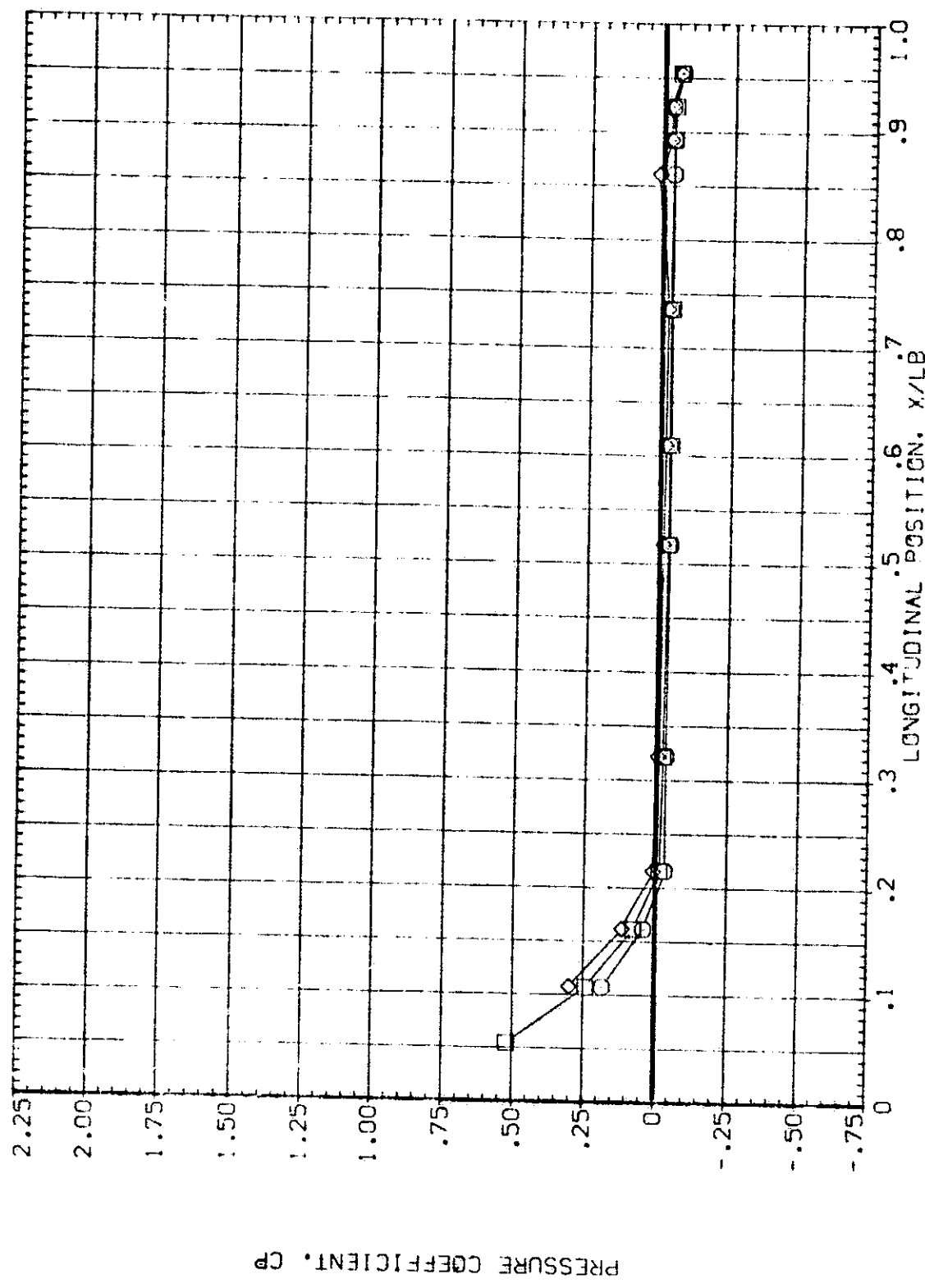


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA085)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 180.000  
 232.500  
 225.000

ALPHA  
 7.800

MACH  
 3.480

PARAMETRIC VALUES

BETA  
 .000  
 1.000  
 45.000

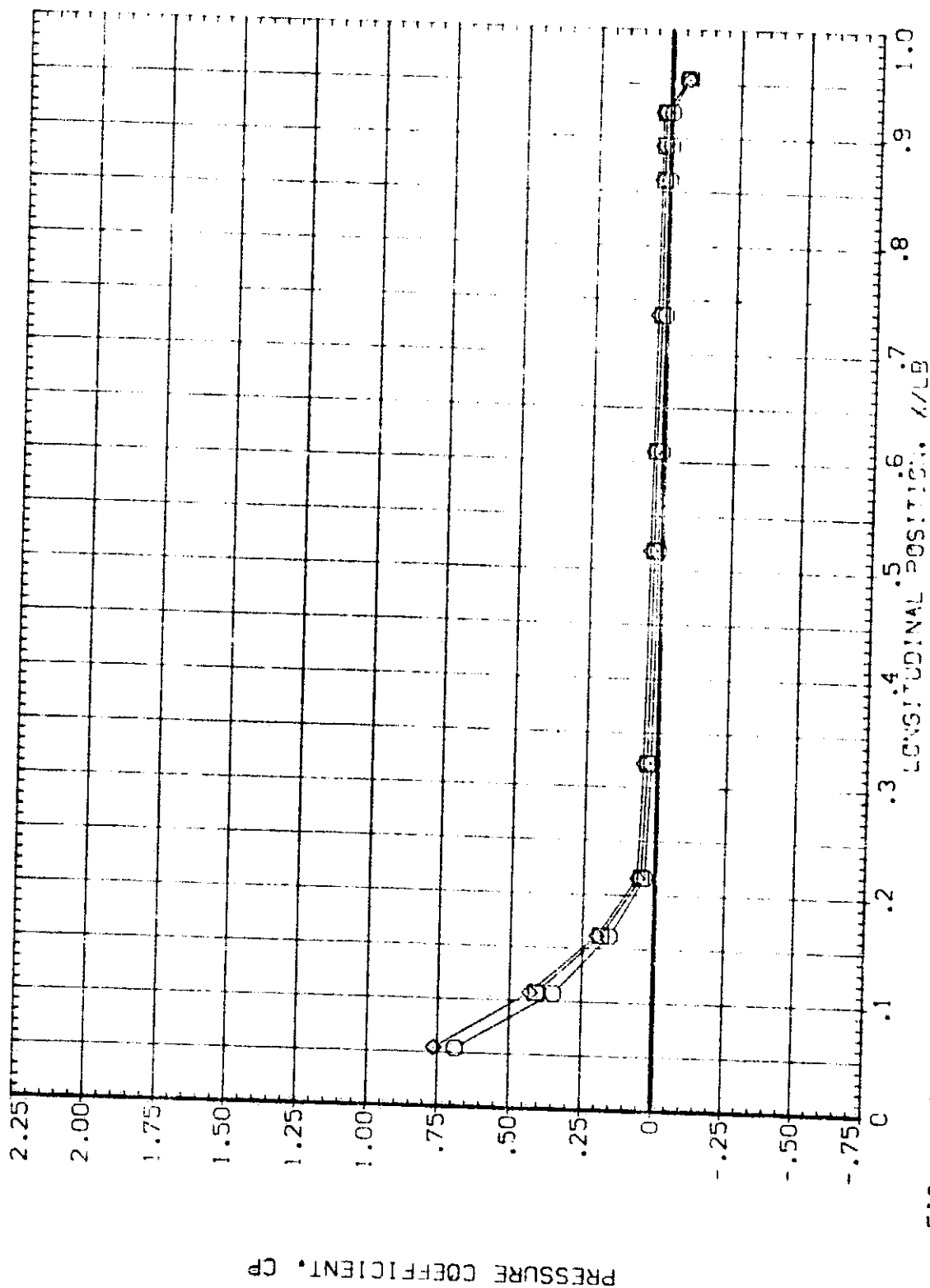


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A085)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
7.800

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000

OFFSET  
0H1  
45.000

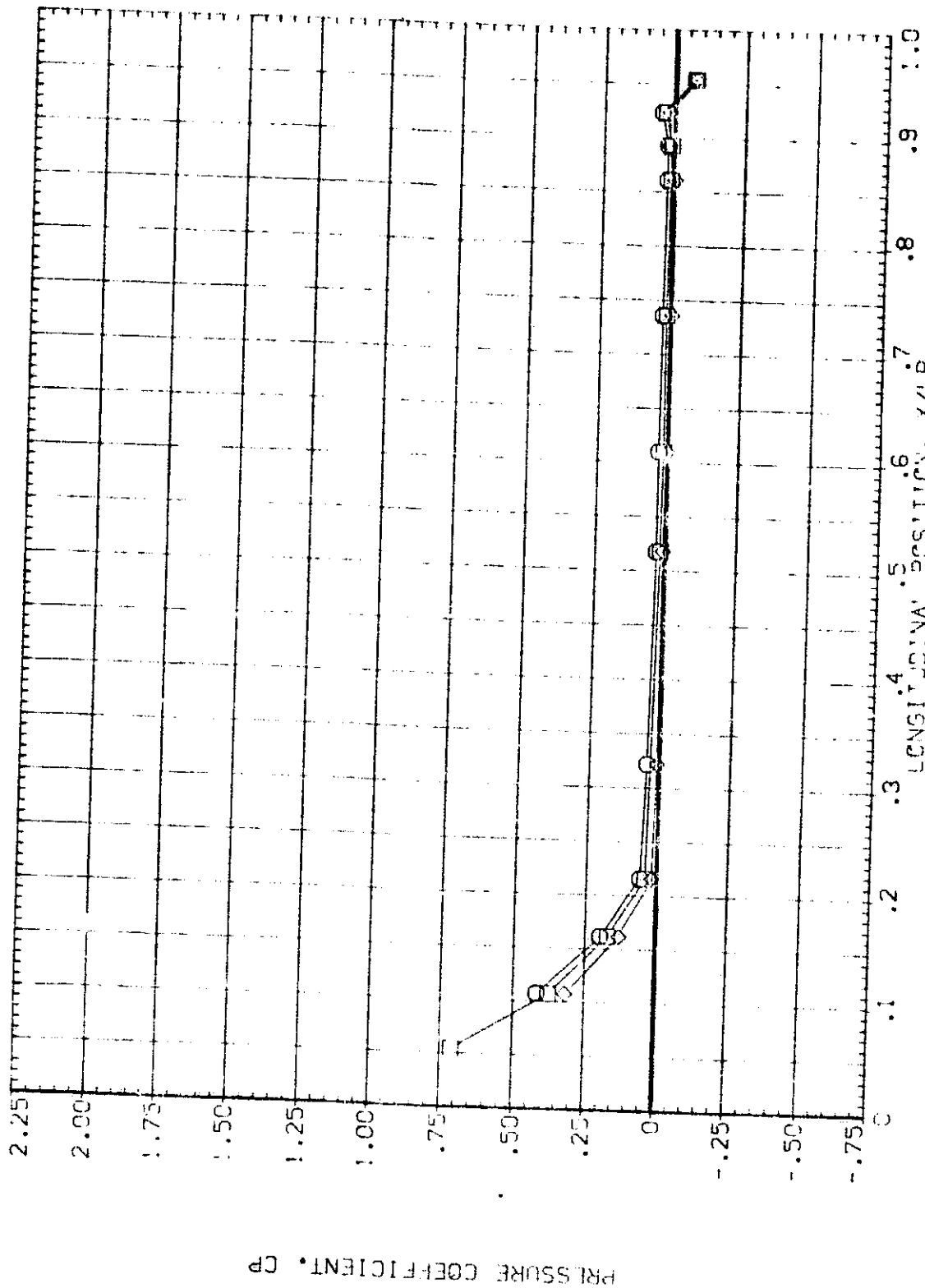


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	315.000	7.800	3.480	.000	.000	.000
□	326.000			1.000		
◇	346.000					45.000

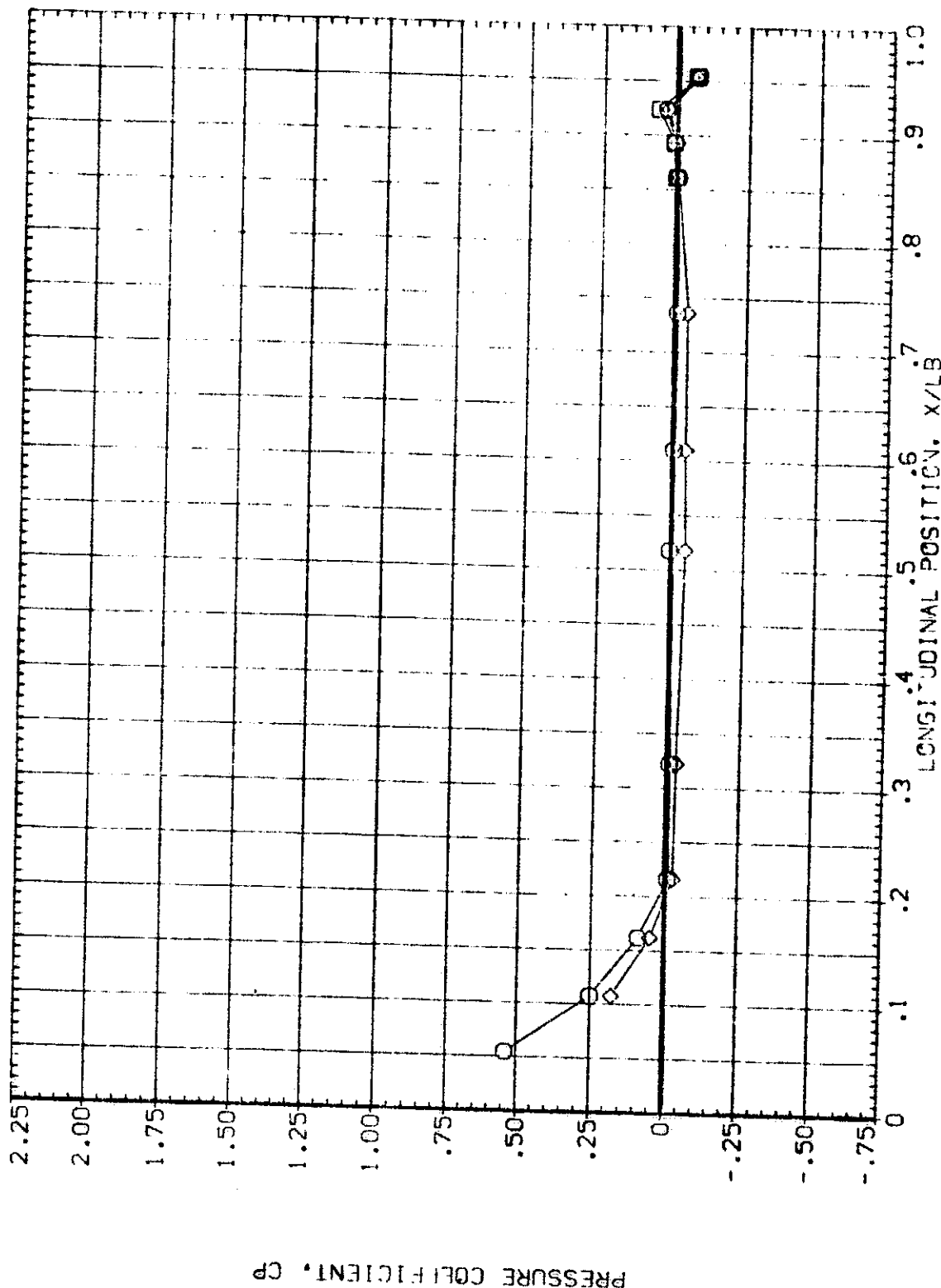


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A086)

SYMBOL THETA ALPHA MACH  
 14.000  
 24.000

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 45.000

BETA  
 .000

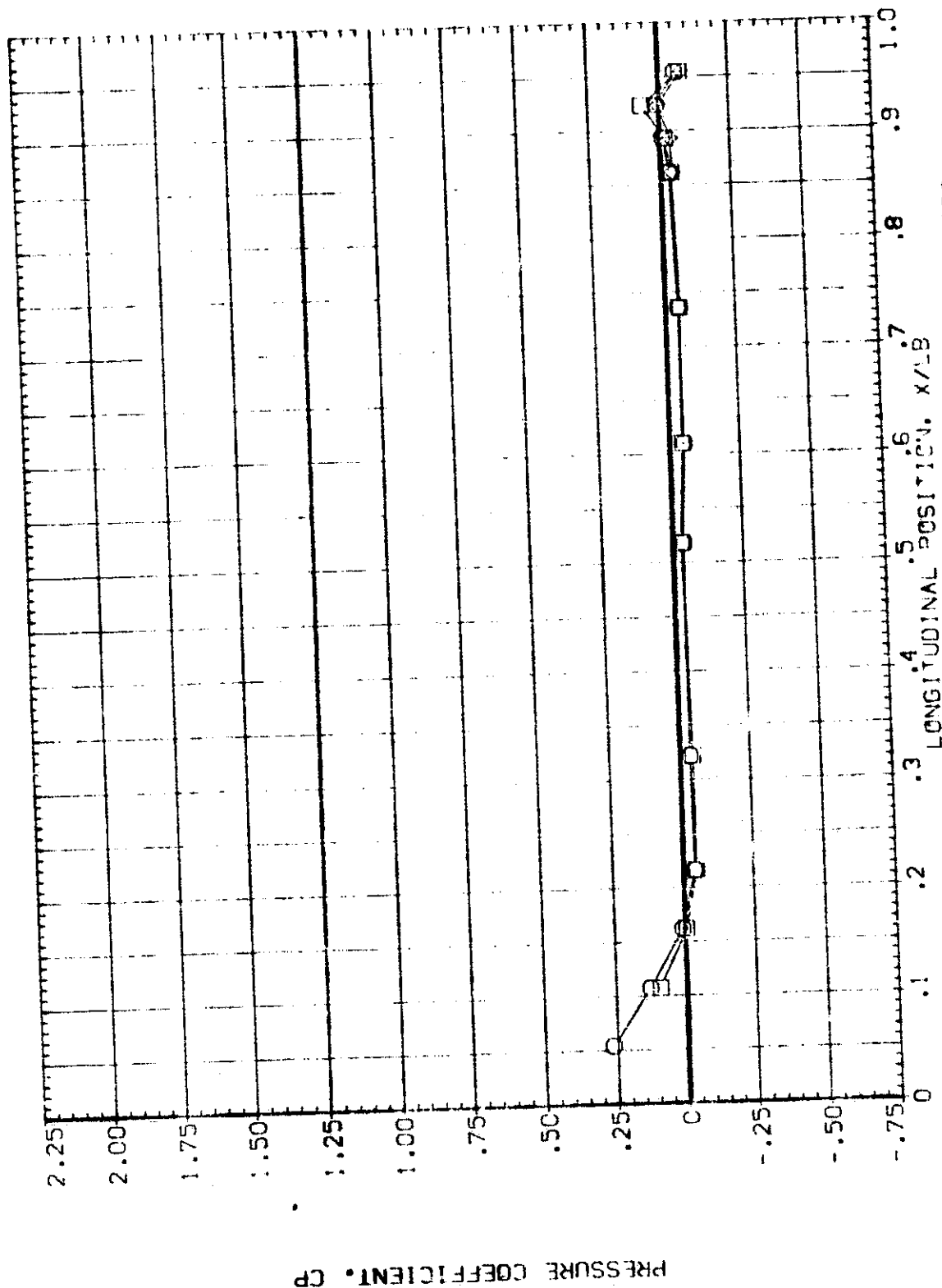


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL

THEYA	ALPHA	MACH
45.000	12.520	3.480
67.500		
90.000		

PARAMETRIC VALUES		
BETA	.000	OFFSET
MOUNT	1.000	PHI

20.000  
45.000

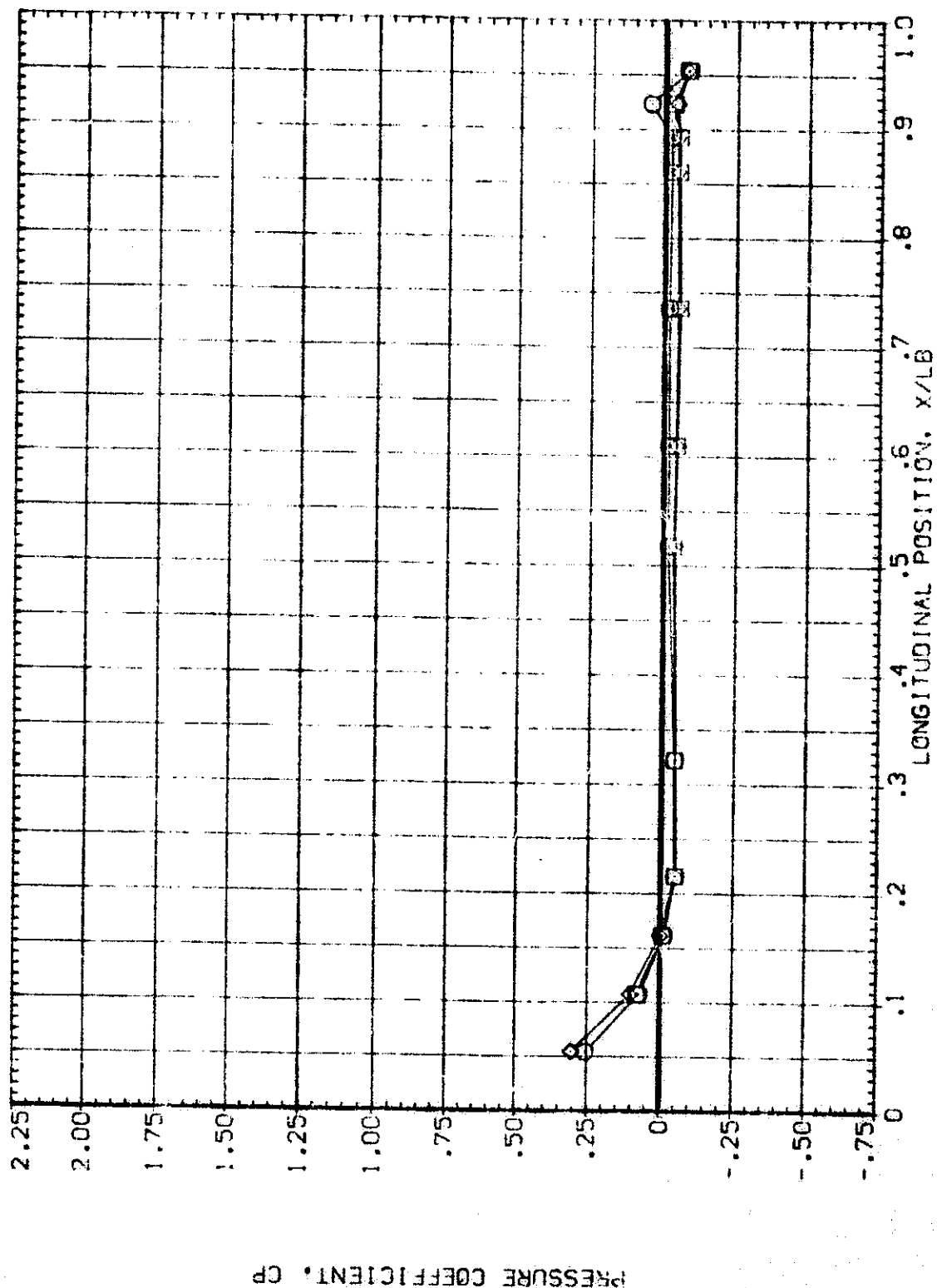


FIG. 4. PRESSURE DISTRIBUTION OVER ET - 11 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA086)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 12.520

MACH  
 7.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 OFFSET  
 1.000 PHI  
 20.000  
 45.000

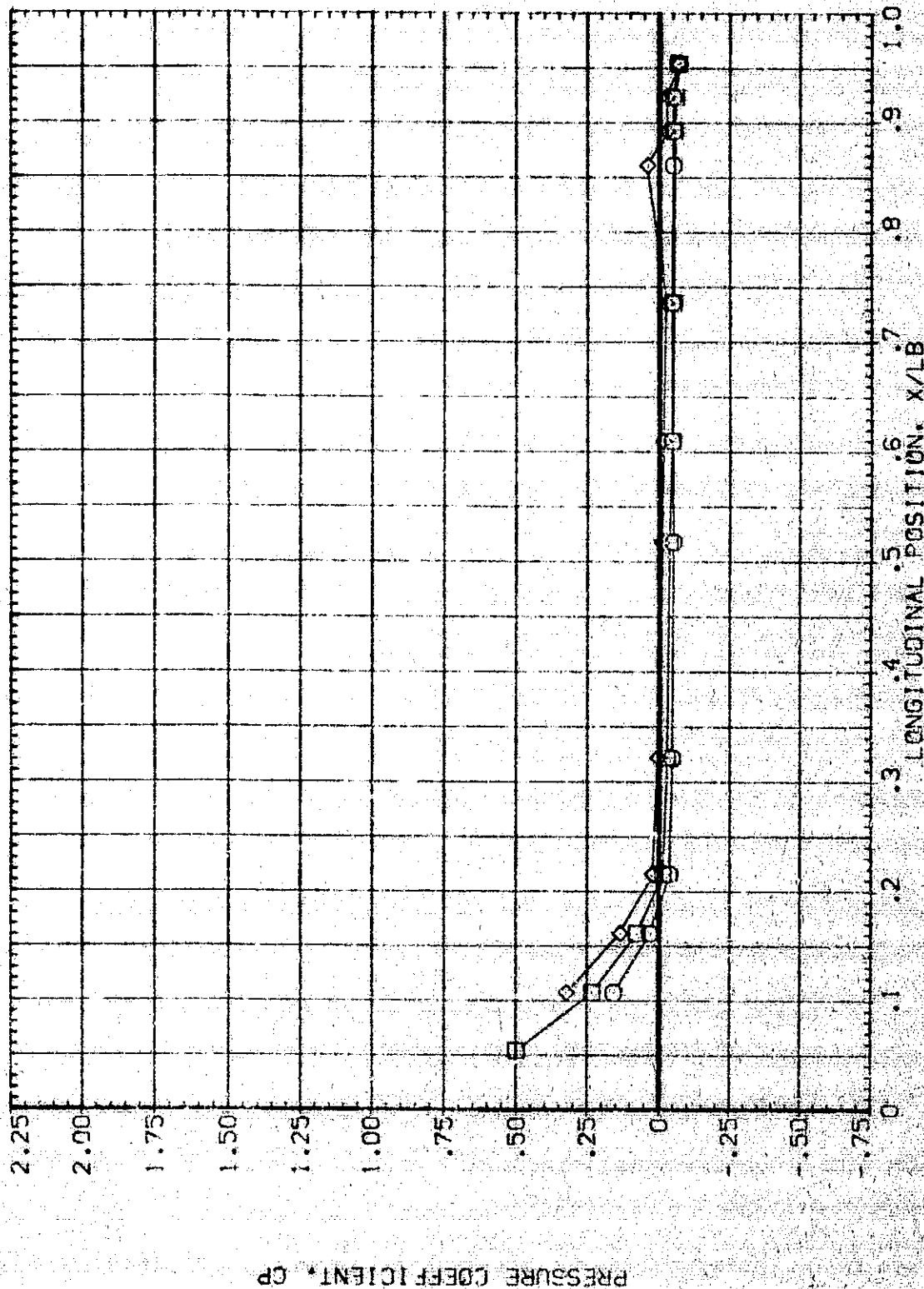


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA086)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 12.520

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 OFFSET  
 1.000 PHI

20.000  
 45.000

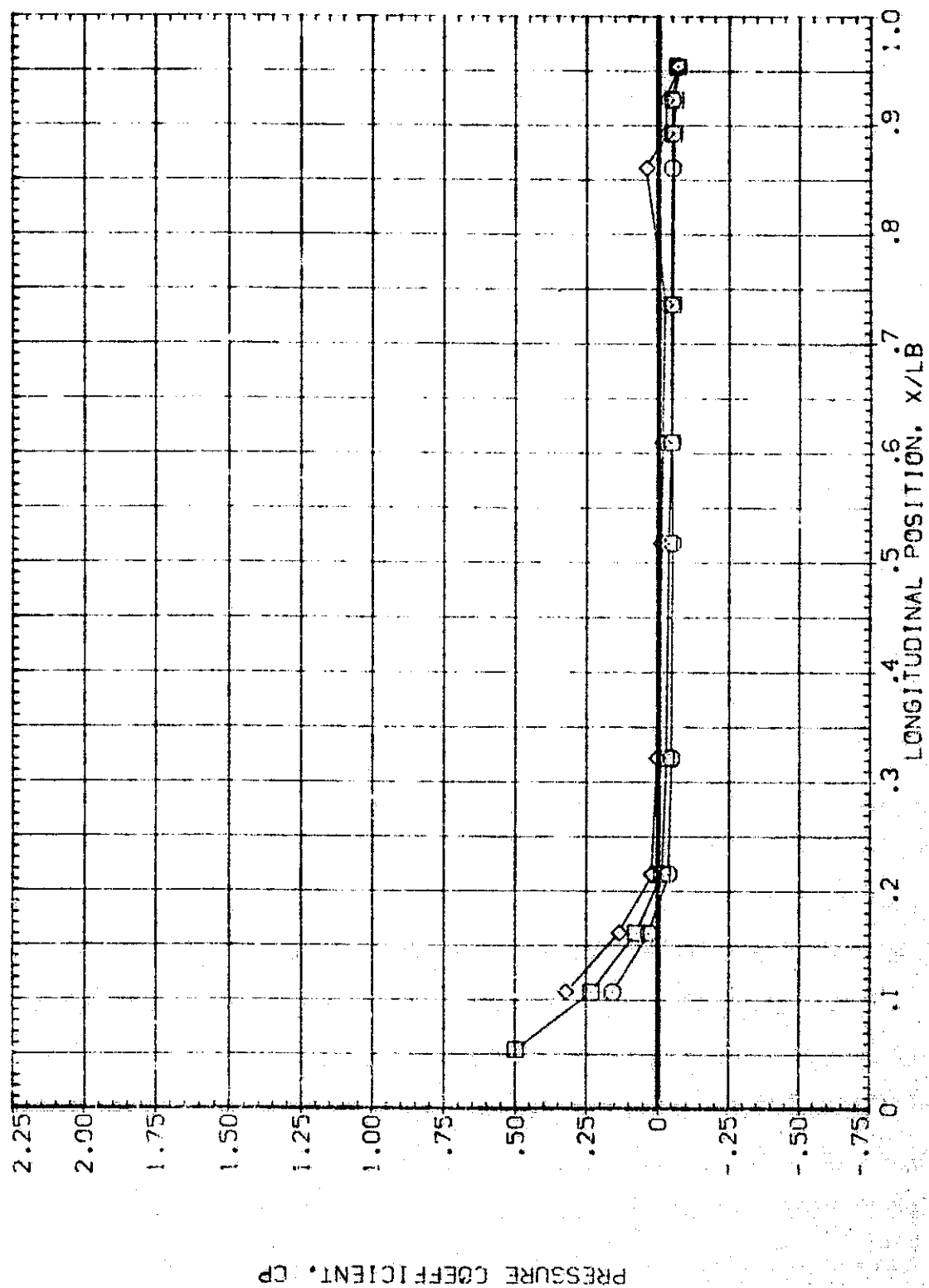


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A086)

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	180.000	12.520	3.460	.000	OFFSET
□	202.500			1.000	PHI
◇	225.000				

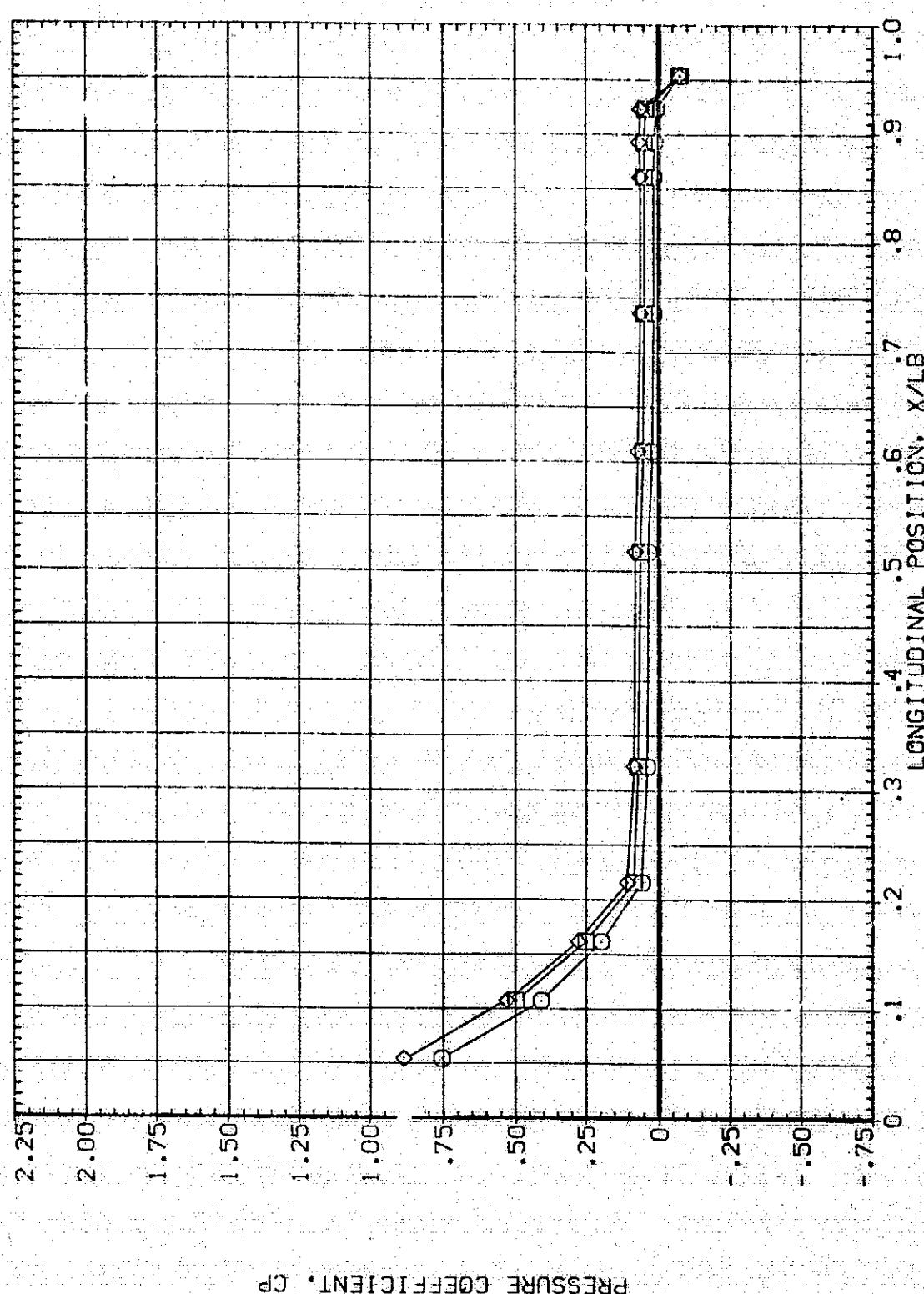


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A086)

PARAMETRIC VALUES  
BETA .000  
MOUNT 1.003  
PHI 20.000  
45.003

SYMBOL THETA ALPHA MACH  
○ 247.500 12.520 3.480  
□ 270.000  
◇ 292.500

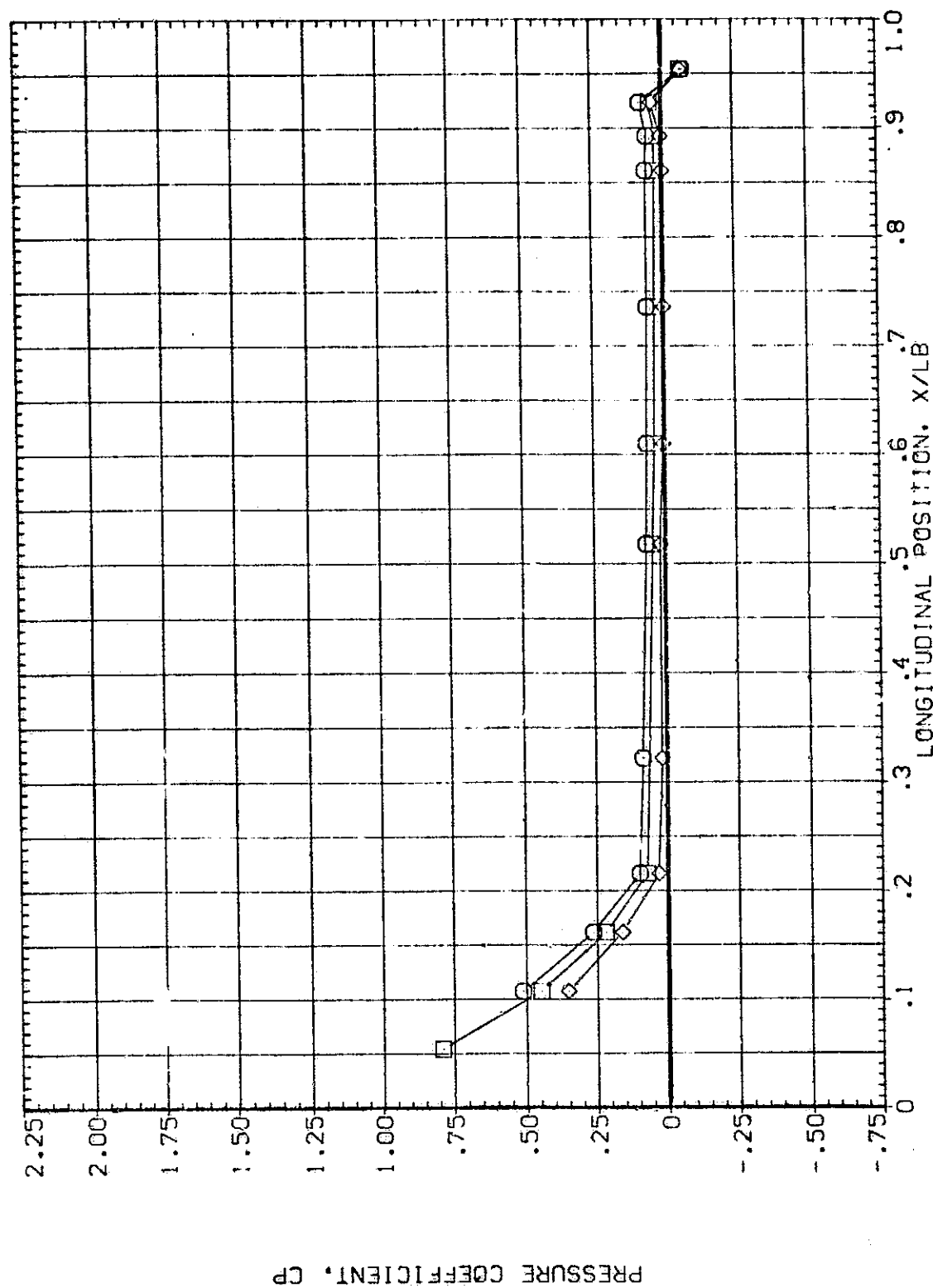


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 12.520

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 1.000  
 .000  
 45.000

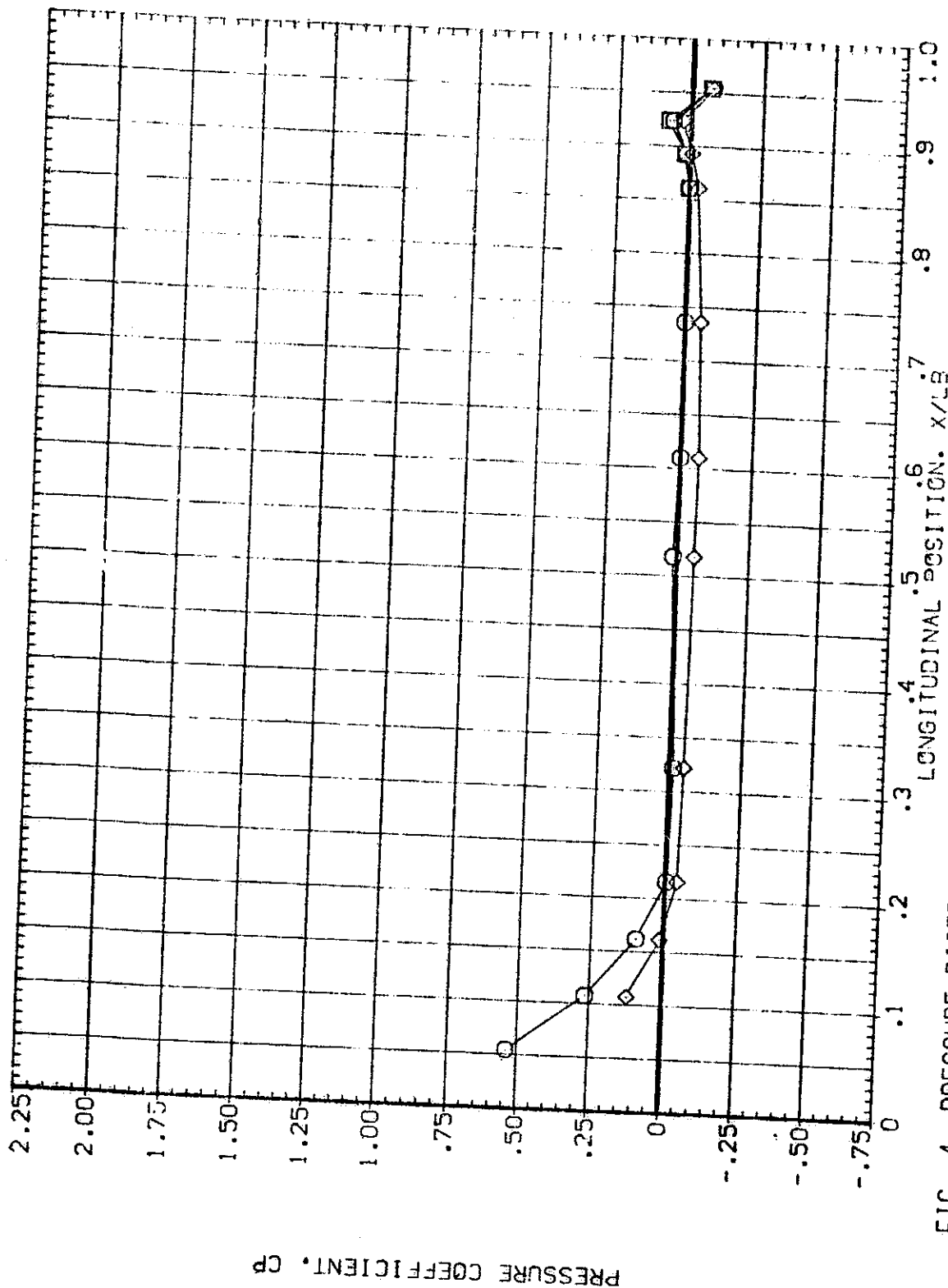


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA087)

SYMBOL  
□  
◇

THETA  
.000  
14.000  
24.000

ALPHA  
16.560

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI

20.000  
45.000

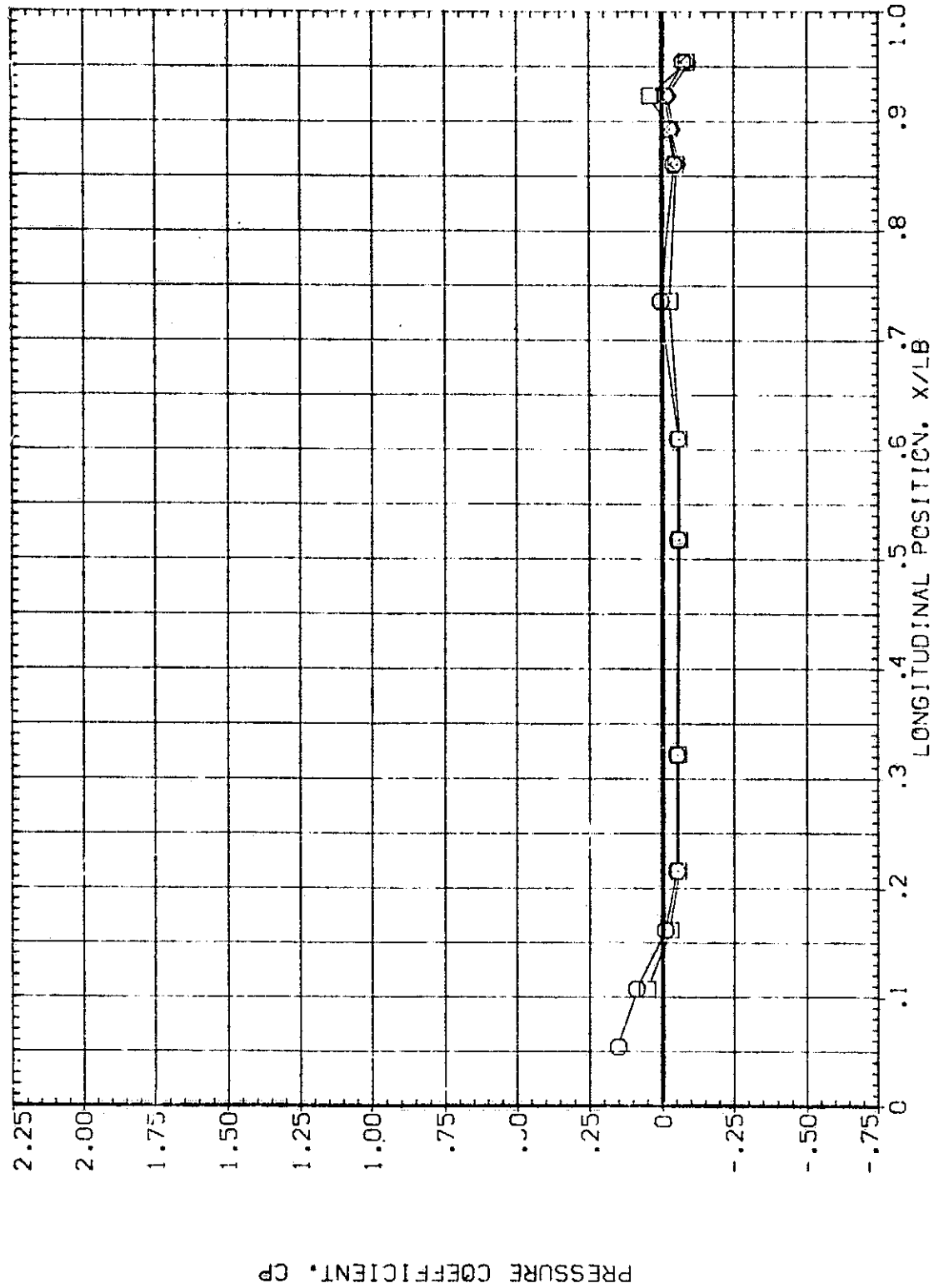


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 16.560

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI  
 20.000  
 45.000

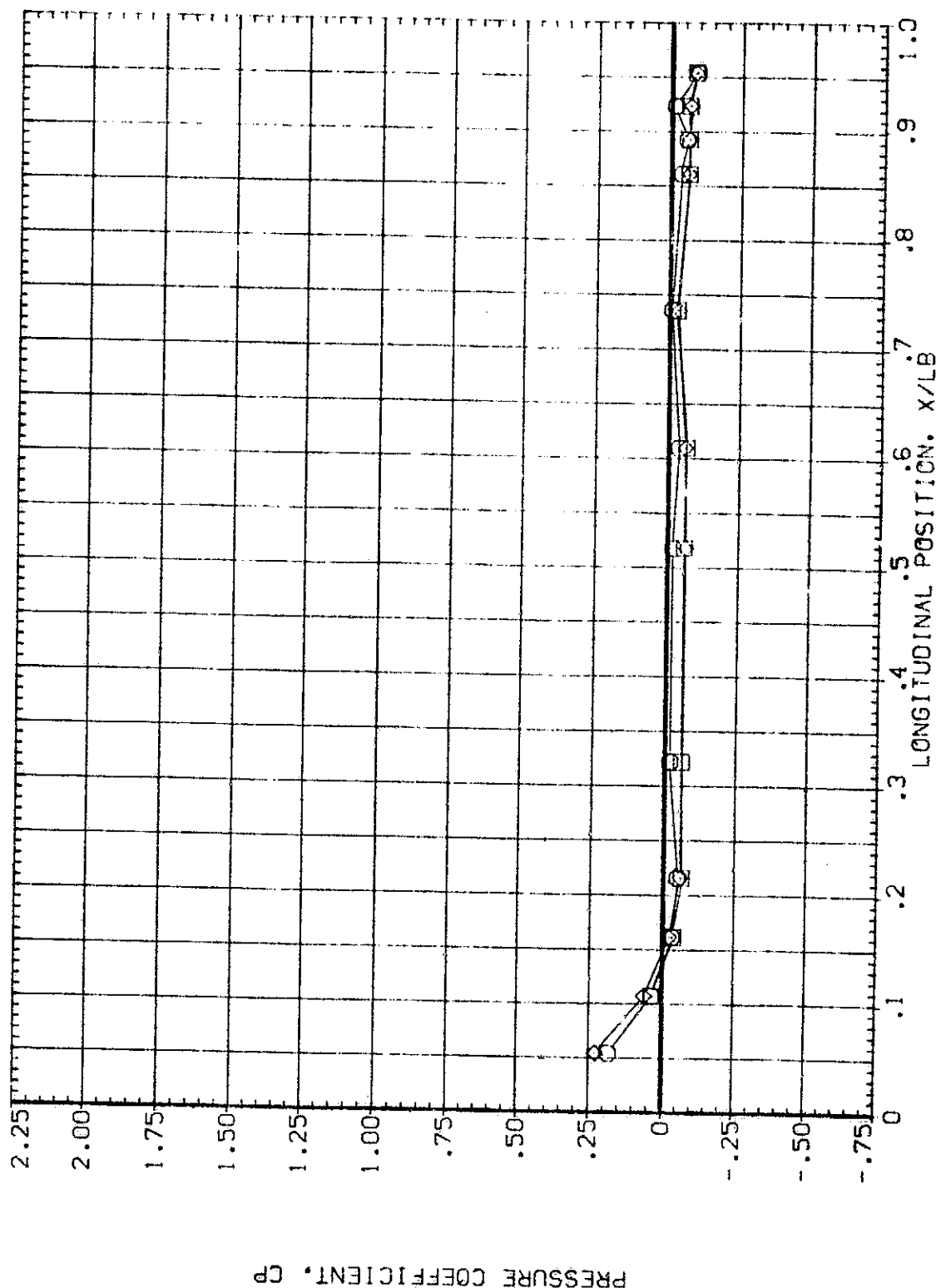


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A087)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 16.560

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI  
 20.000  
 45.000

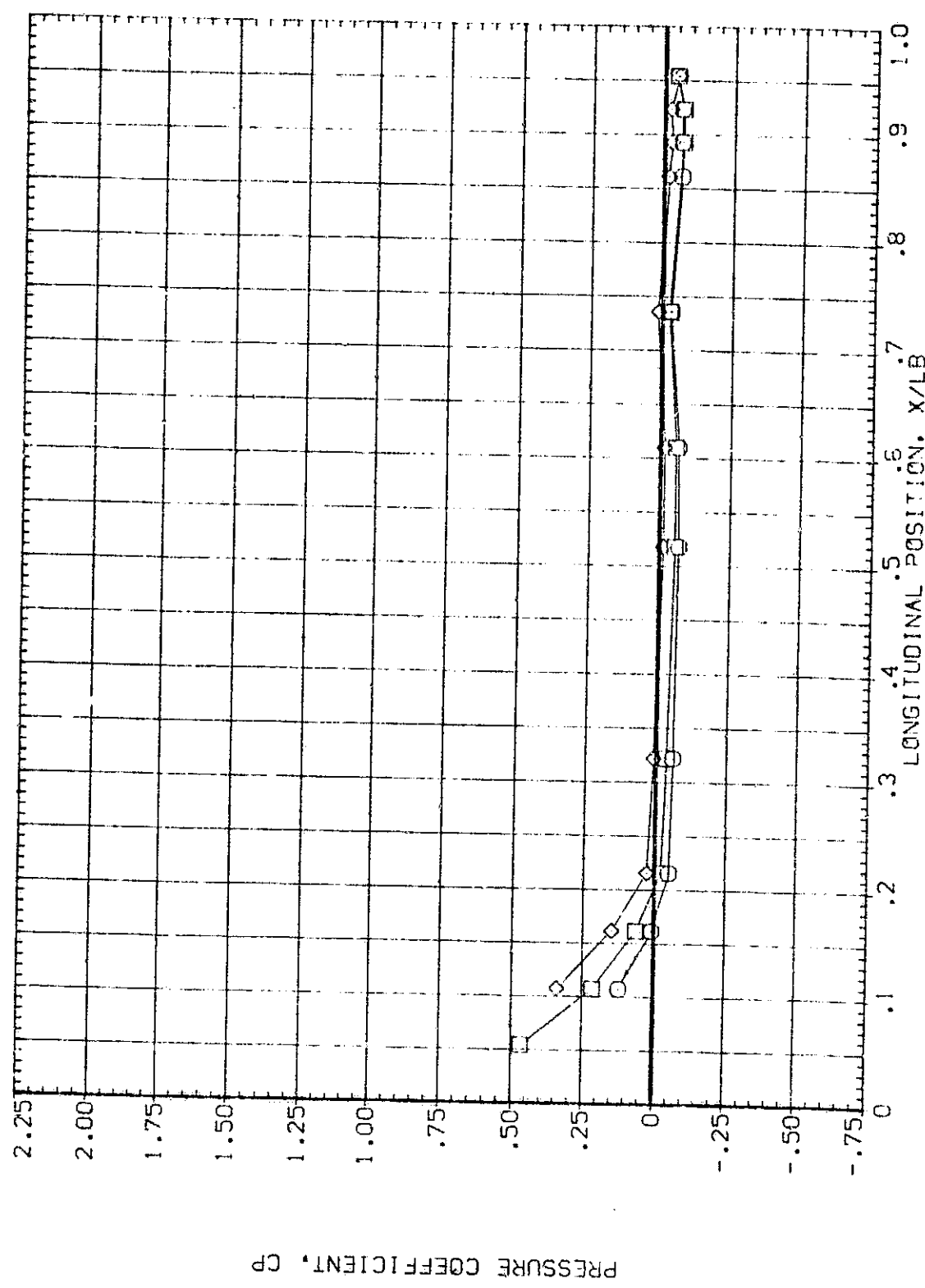


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL

THETA  
180.000  
202.500  
225.000

ALPHA  
16.560  
MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
20.000  
45.000

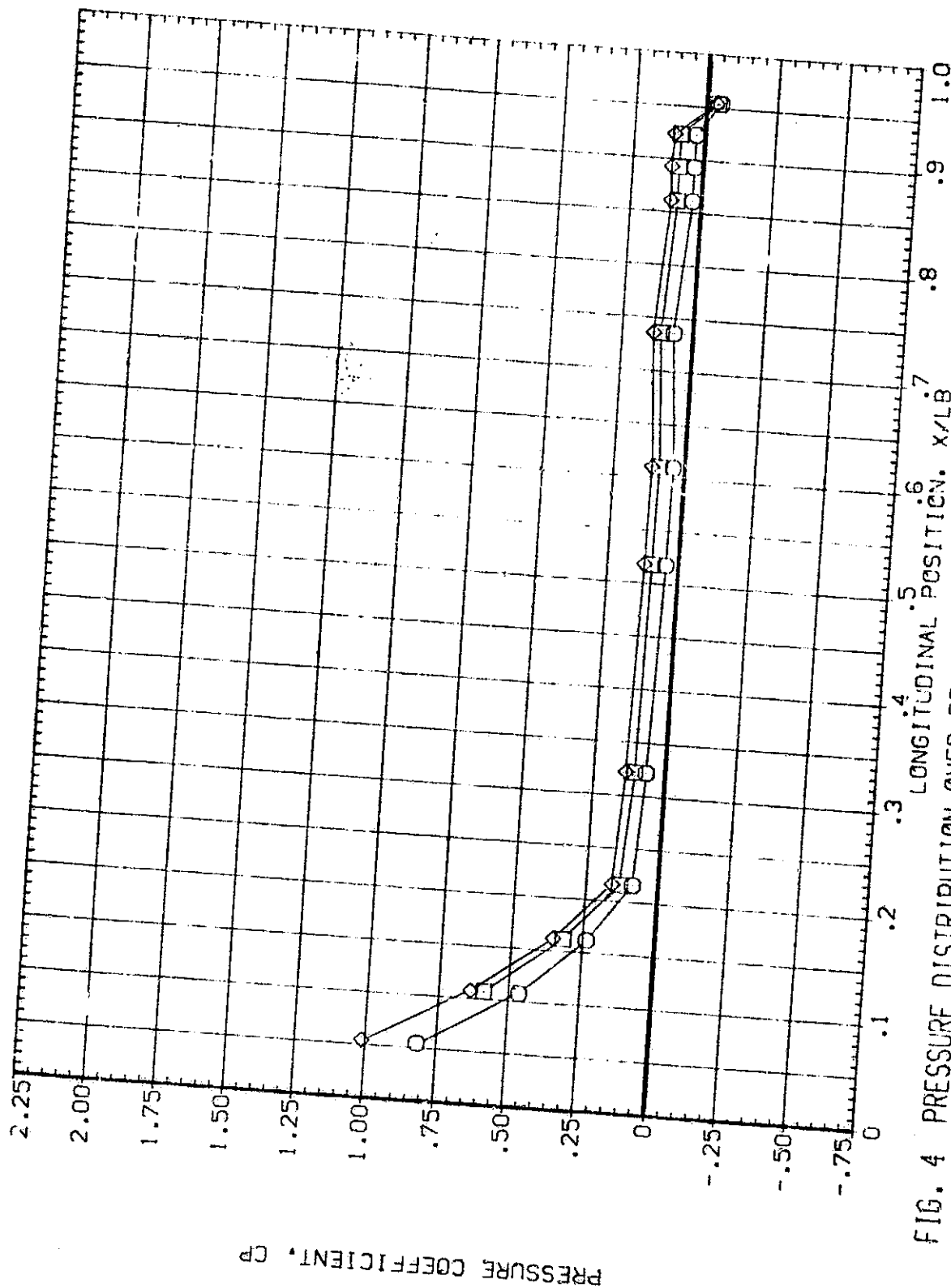


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A087)

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI 45.000

ALPHA 16.566 MACH 3.480

THETA 247.500  
 270.000  
 292.500

SYMBOL  
 ○  
 □  
 ◇

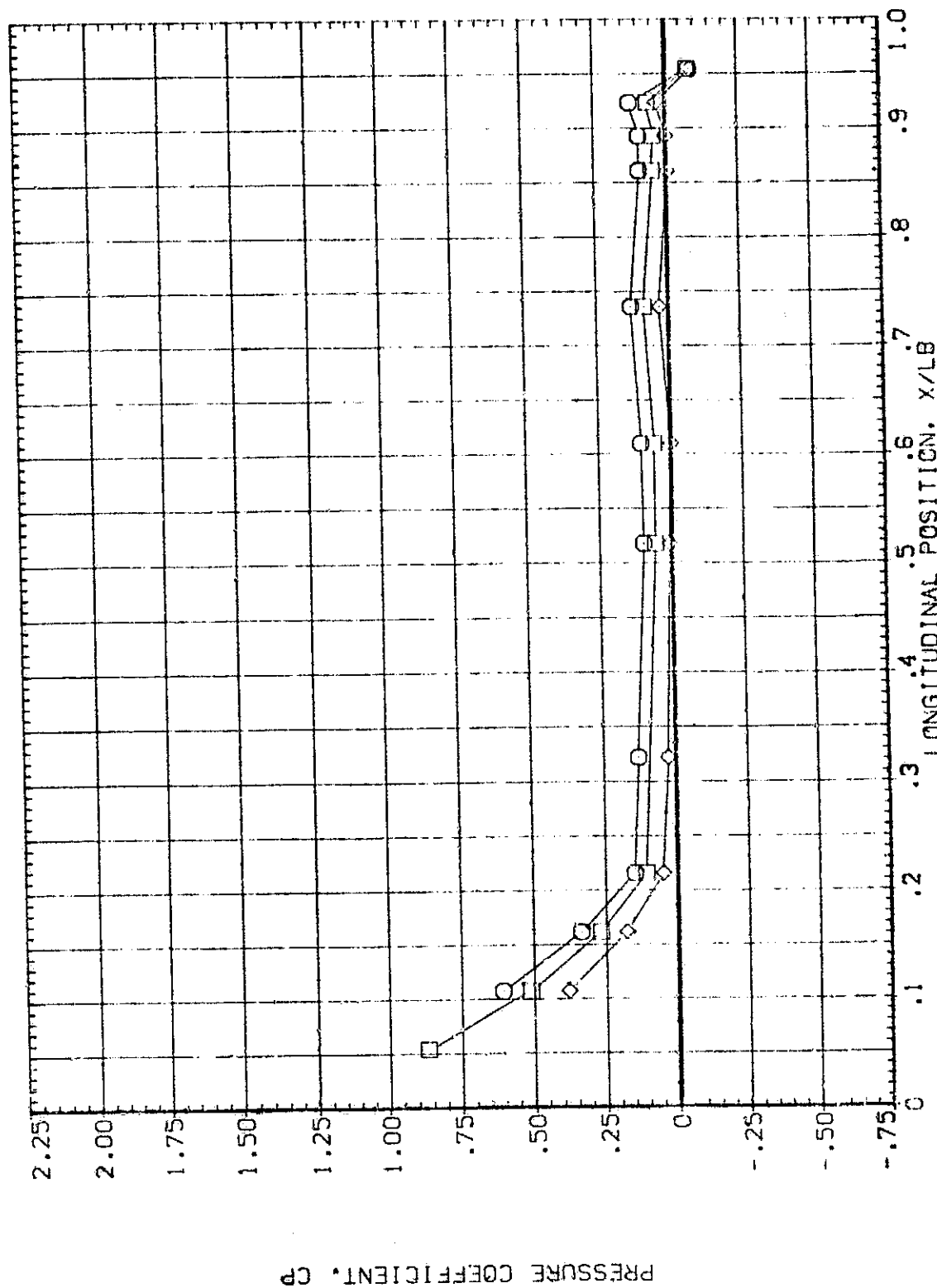


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
	315.000 326.000 346.000	16.560	3.480	BETA MOUNT	OFFSET PHI	20.000 45.000

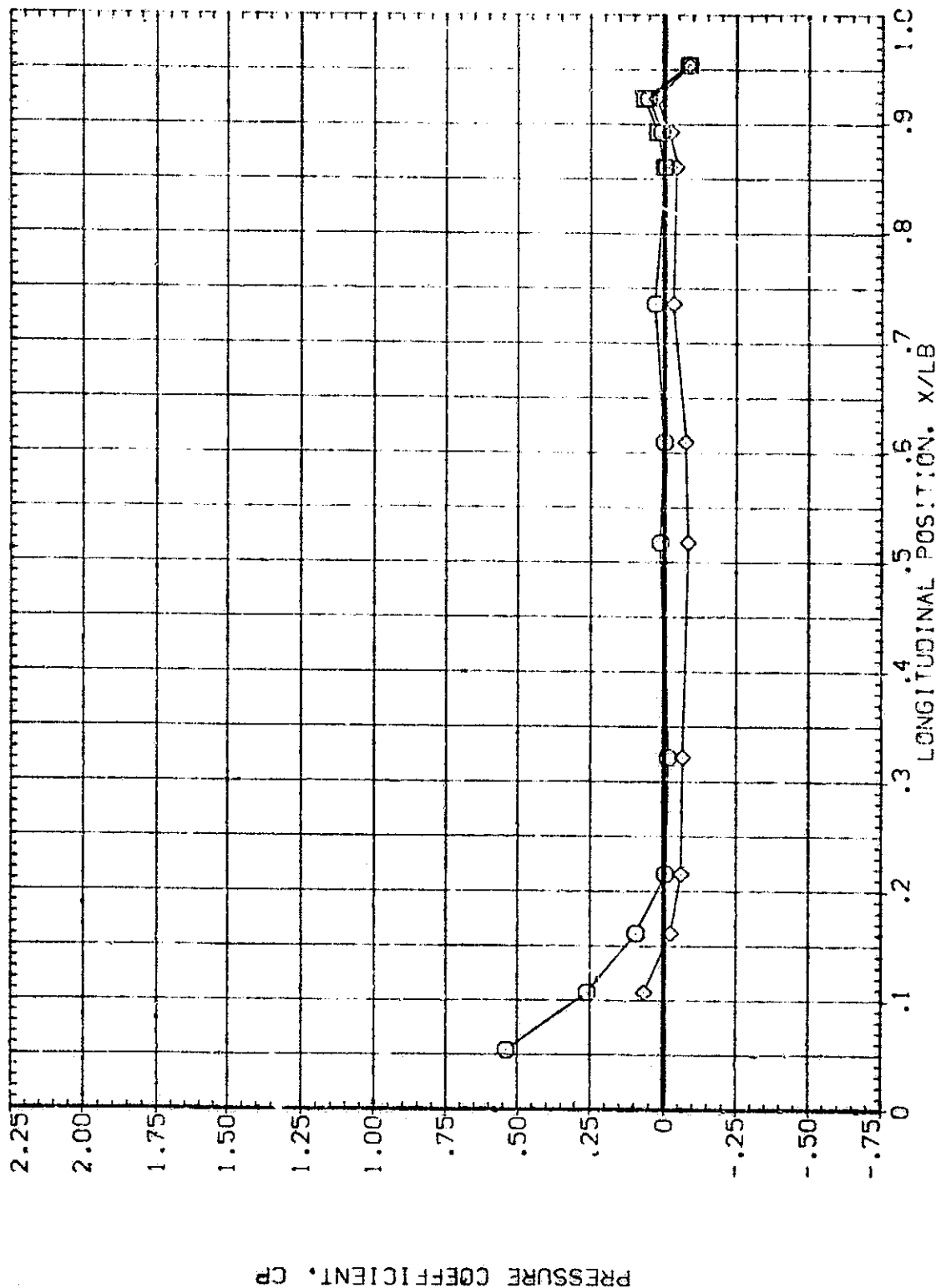


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA088)

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 45.000

BETA  
 MOUNT

MACH  
 3.480

ALPHA  
 20.610

THETA  
 .000  
 14.000  
 24.000

SYMBOL  
 ○  
 □  
 ◇

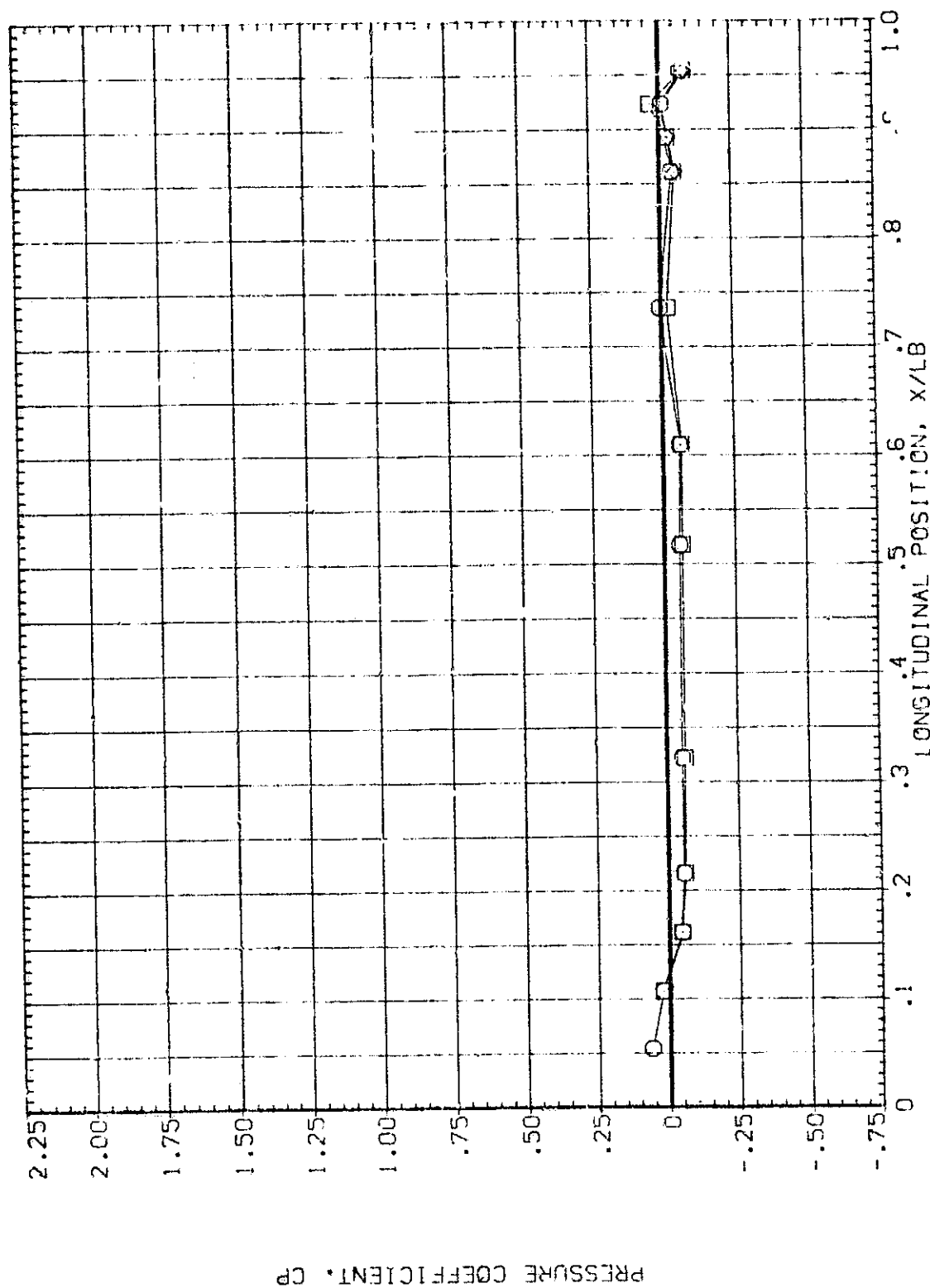


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	45.000	20.610	3.480	.000	1.000	20.000
□	57.500					45.000
◇	90.000					

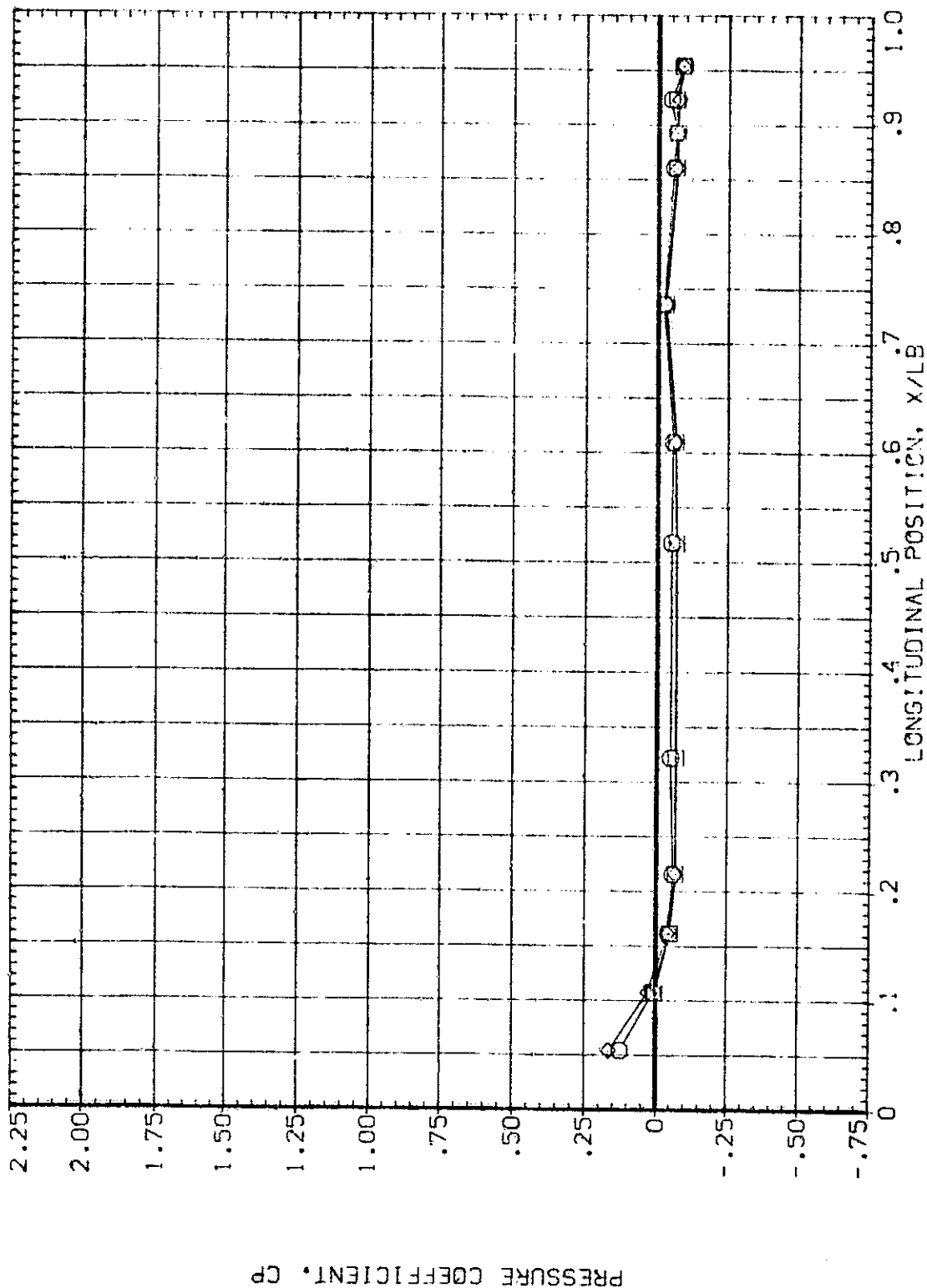


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCRC200 EXTERNAL TANK, T1 (P1A088)

SYMBOL

THETA  
112.500  
135.000  
157.500

ALPHA  
20.610

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000 OFFSET  
1.000 PHI

20.000  
45.000

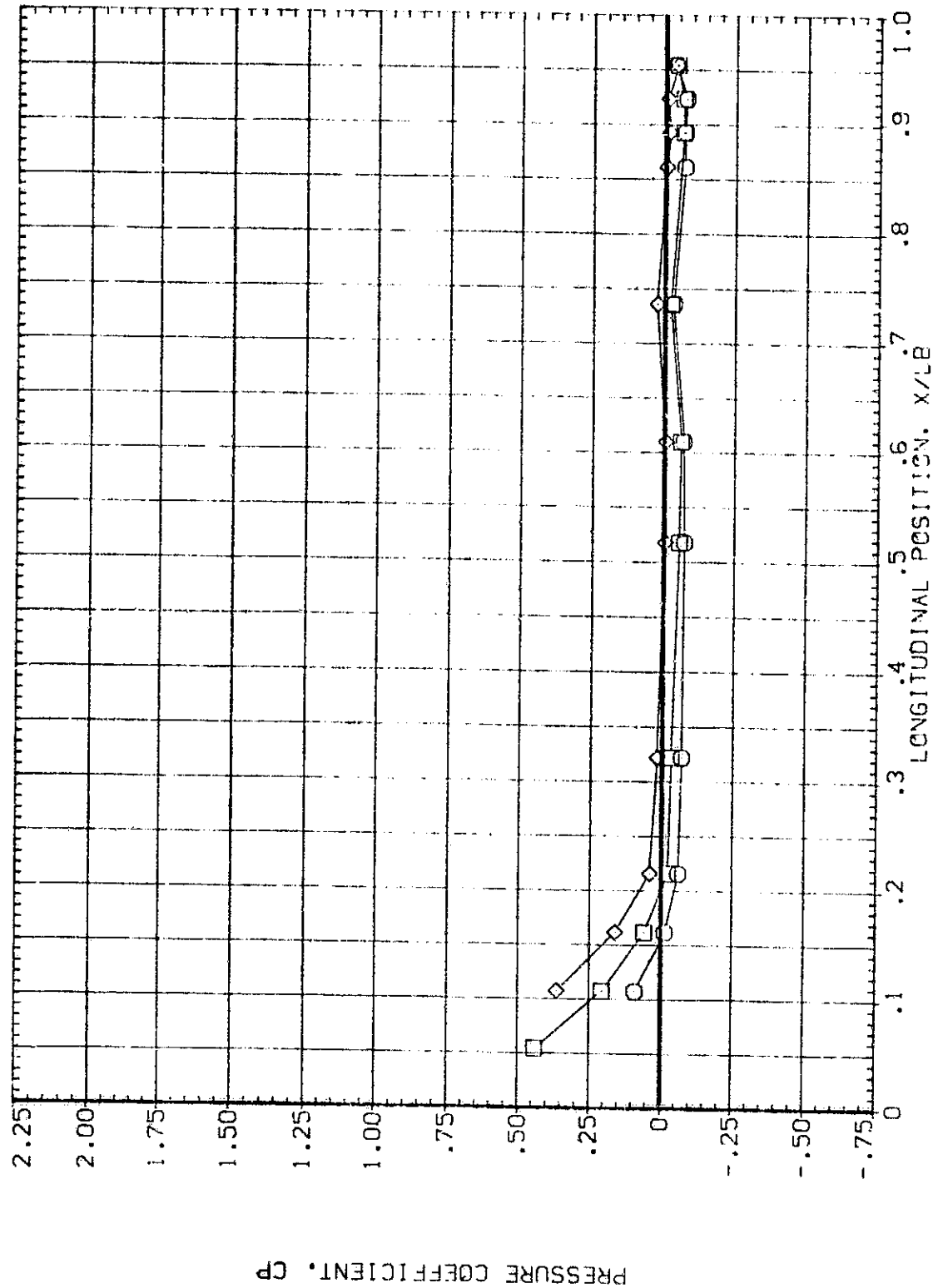


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	180.000	20.610	3.480	.000	.000	20.000
□	202.500			1.000		45.000
◇	225.000					

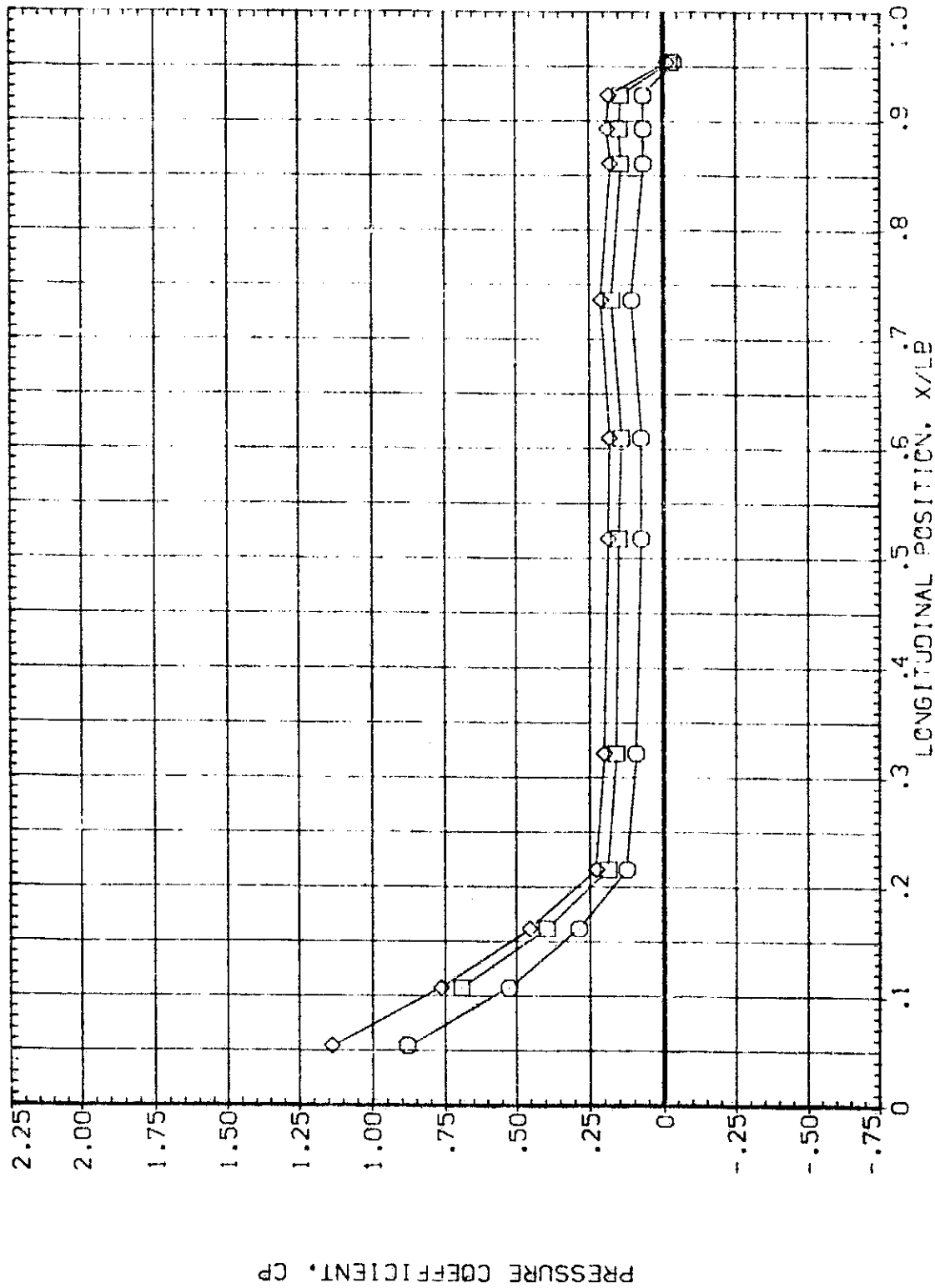


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EX1

1L TANK, T1

(PIA088)

SYMBOL

THETA

ALPHA

MACH

247.500

20.610

3.480

□

◇

270.000

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

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◇

292.500

20.610

3.480

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◇

292.500

20.610

3.480

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◇

292.500

20.610

3.480

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◇

292.500

20.610

3.480

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292.500

20.610

3.480

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◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

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292.500

20.610

3.480

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◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

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◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

◇

292.500

20.610

3.480

◇

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A088)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20.000
○	315.000	20.610	3.480	1.000	PHI	45.000
□	326.000					
◇	346.000					

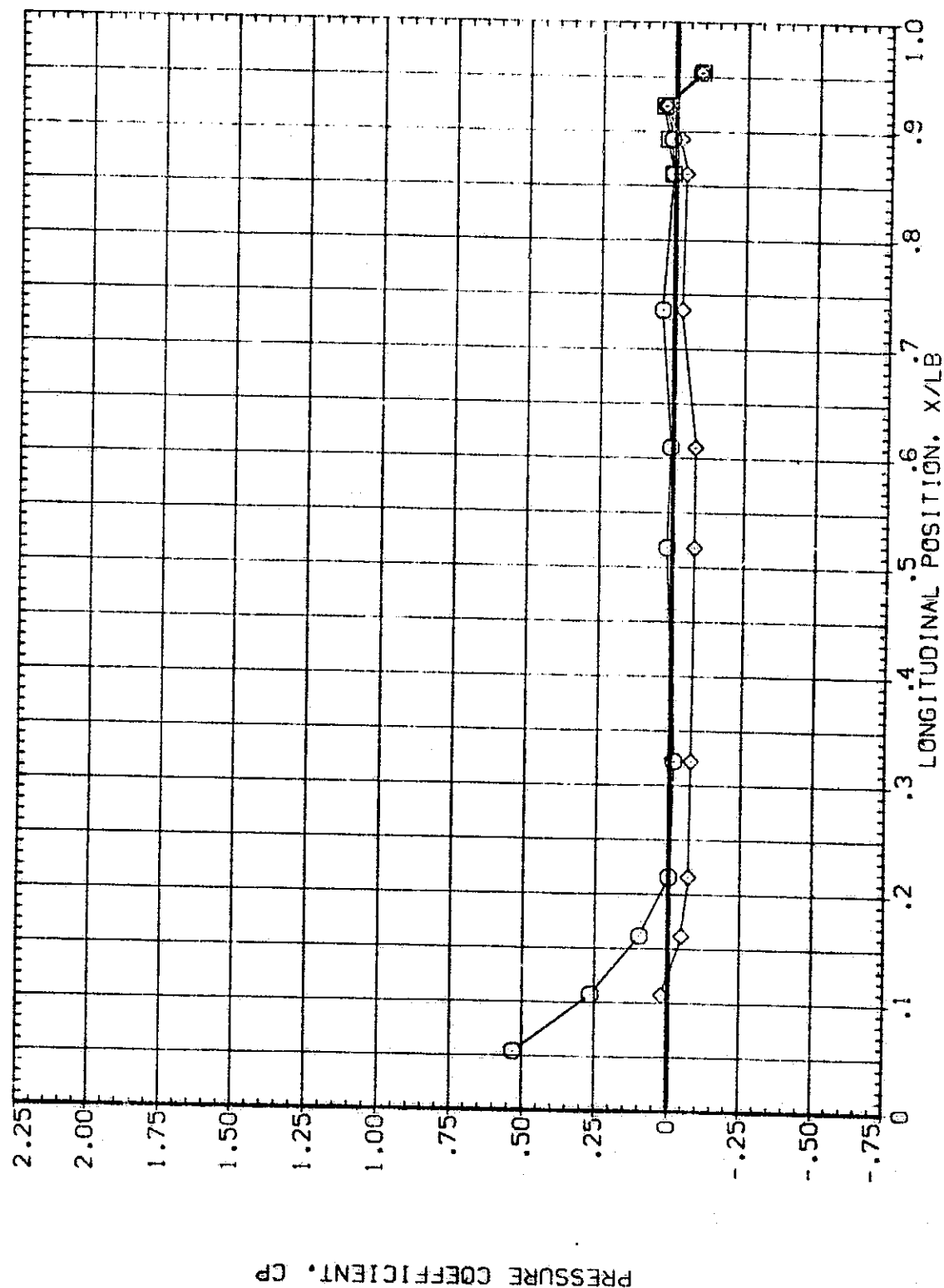


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA089)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	.000	24.660	3.480	1.000	20.000	45.000
□	14.000					
◇	24.000					

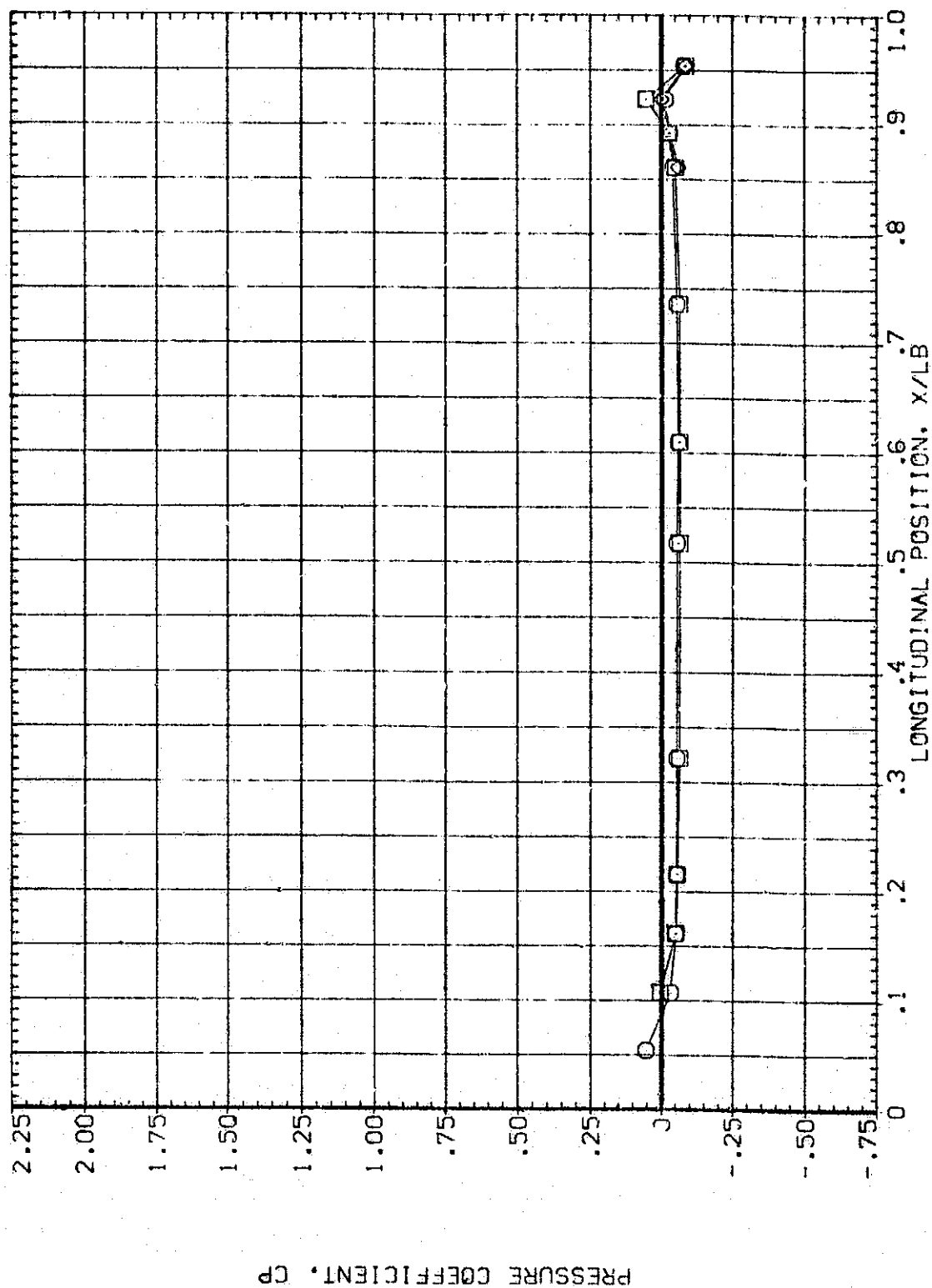


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
○  
□  
◇

THETA  
45.000  
87.500  
90.000

ALPHA  
24.660

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI

20.000  
45.000

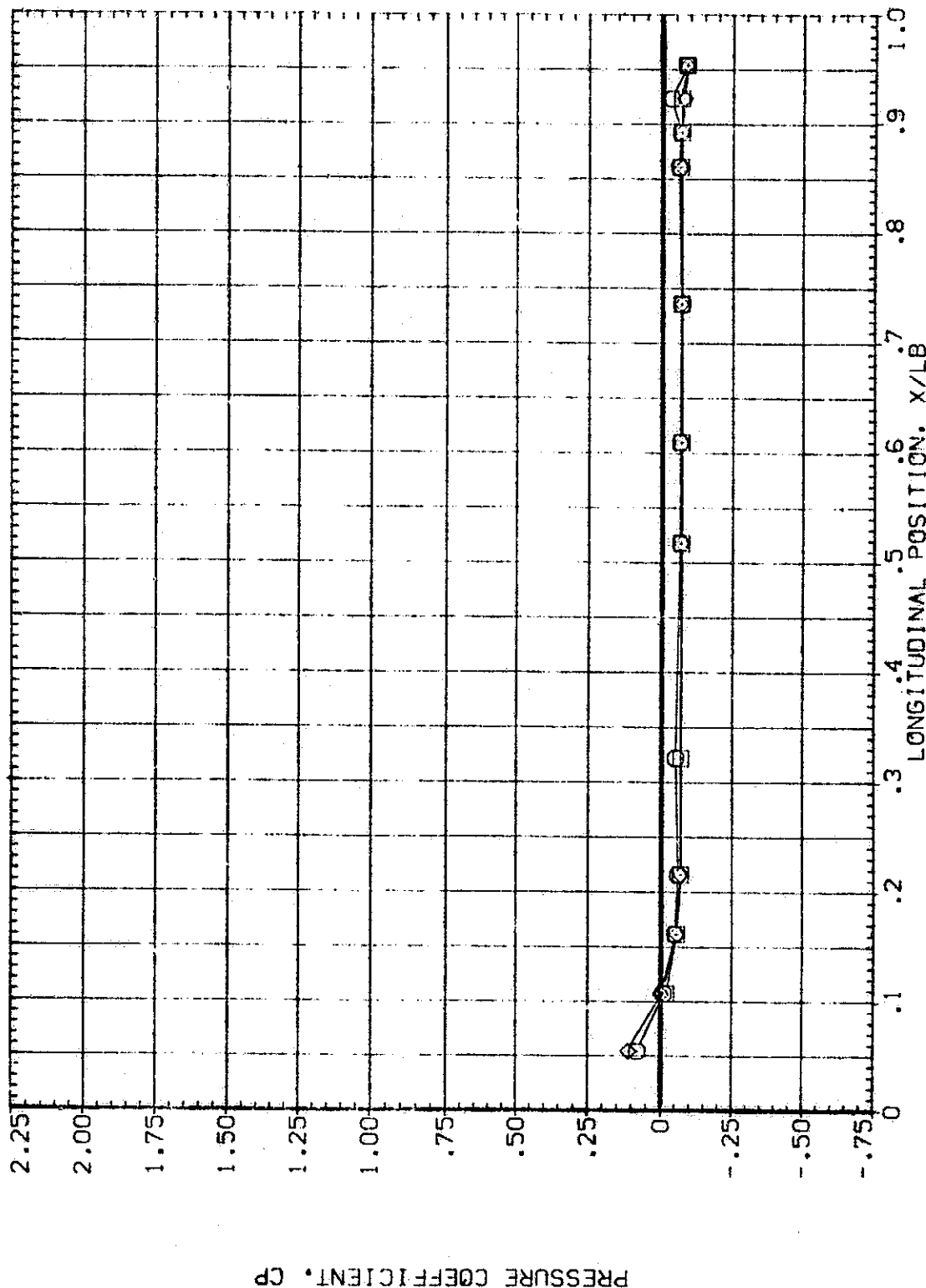


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA089)

SYMBOL

THETA

ALPHA

MACH

BETA

PHI

PARAMETRIC VALUES

20.000

45.000

1.000

1.000

1.000

1.000

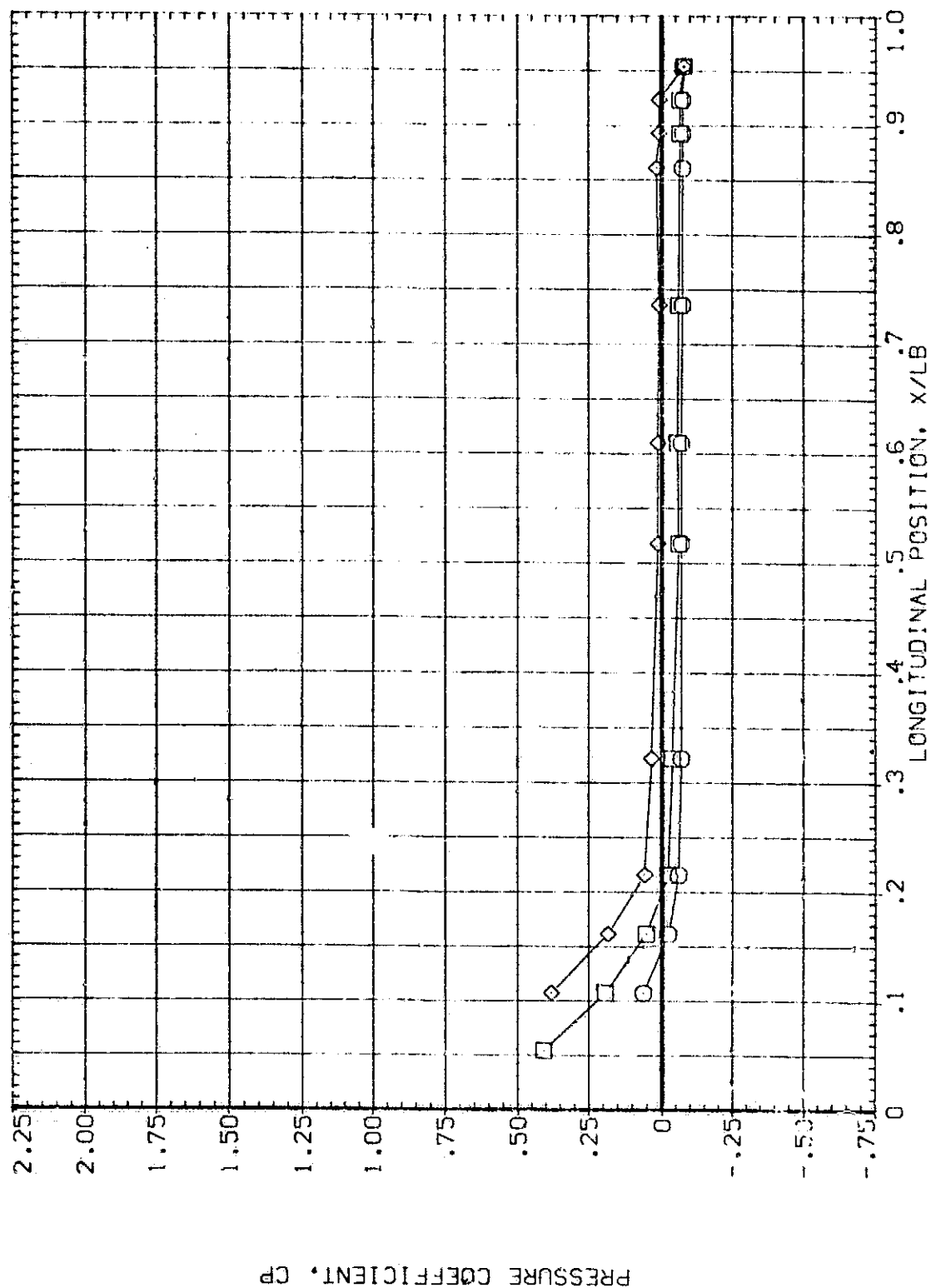


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A089)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	
○	180.000	24.660	3.480	.000	PHI	20.000
□	232.500			1.000		45.000
◇	225.000					

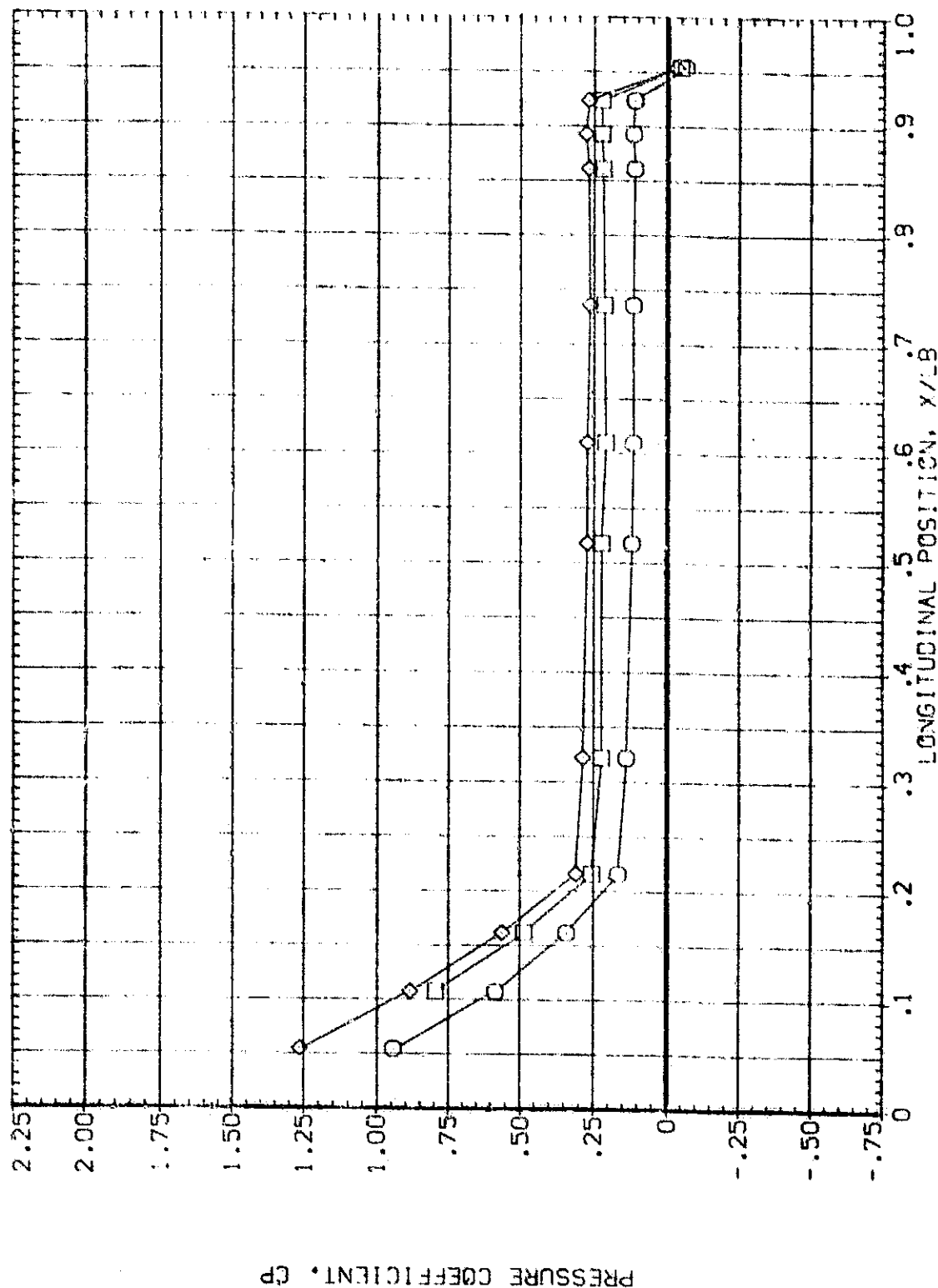


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (PIA089)

SYMBOL  
○  
□  
◇

THETA  
247.500  
270.000  
292.500

ALPHA  
24.660

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI

20.000  
45.000

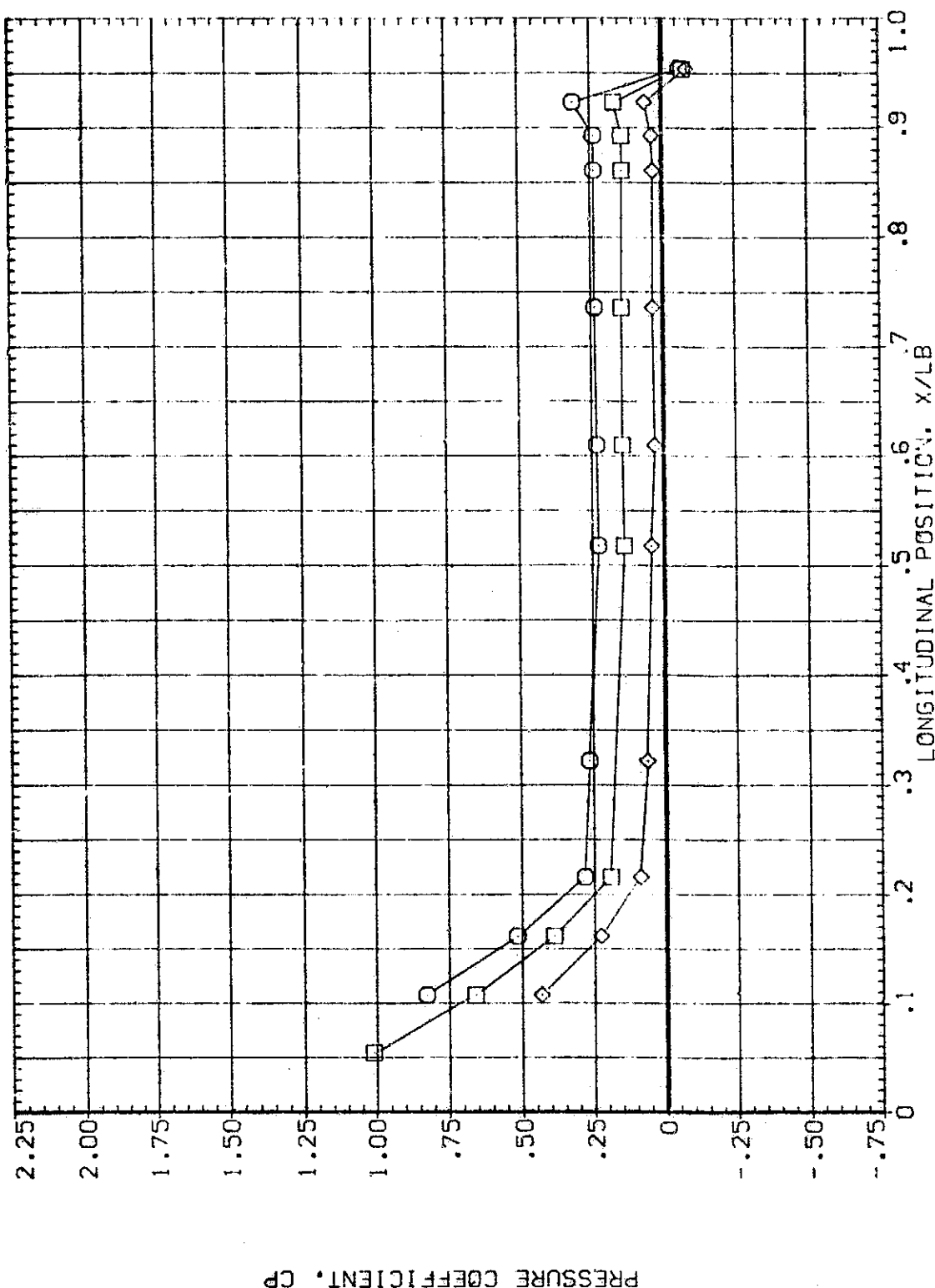


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



SYMBOL  
○  
□  
◇

THETA  
315.000  
326.000  
346.000

ALPHA  
24.660

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT

20.000  
45.000

.000  
1.000

OFFSET  
PHI

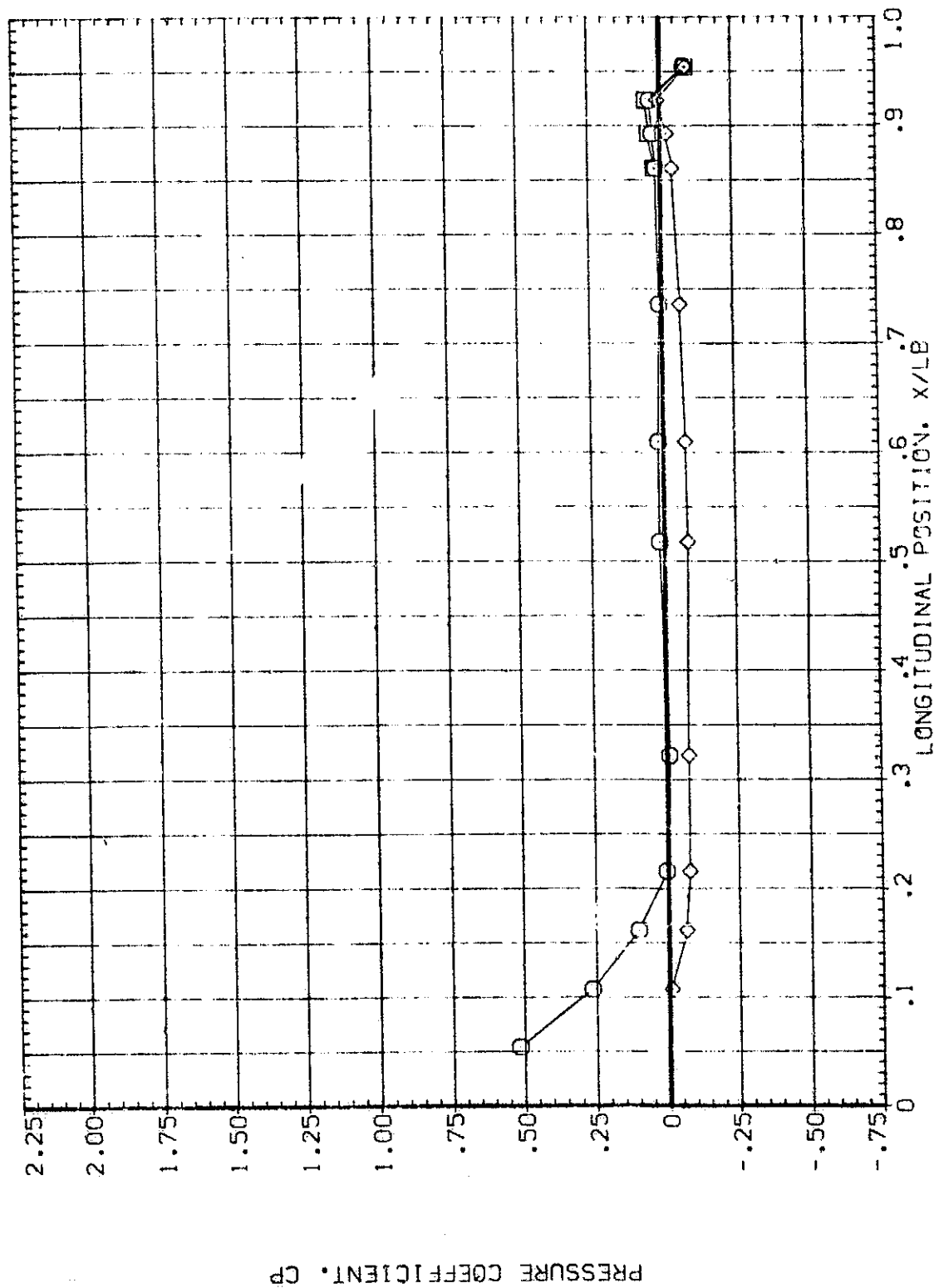


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA090)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	.000	28.700	3.480	.000	1.000	20.000
□	14.000					45.000
◇	24.000					

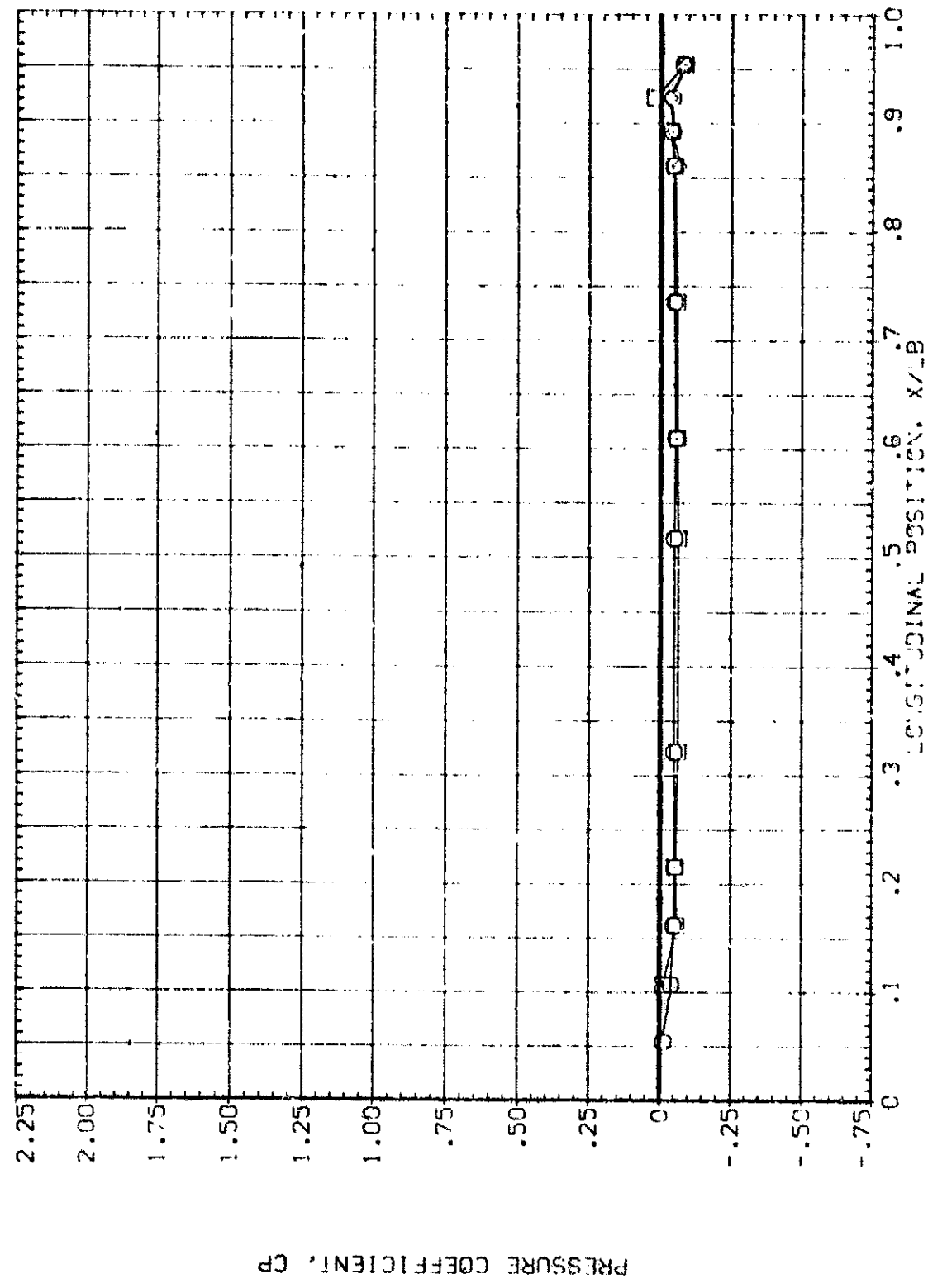


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
□  
◇

THETA  
45.000  
57.500  
90.000

ALPHA  
28.700

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
20.000  
45.000

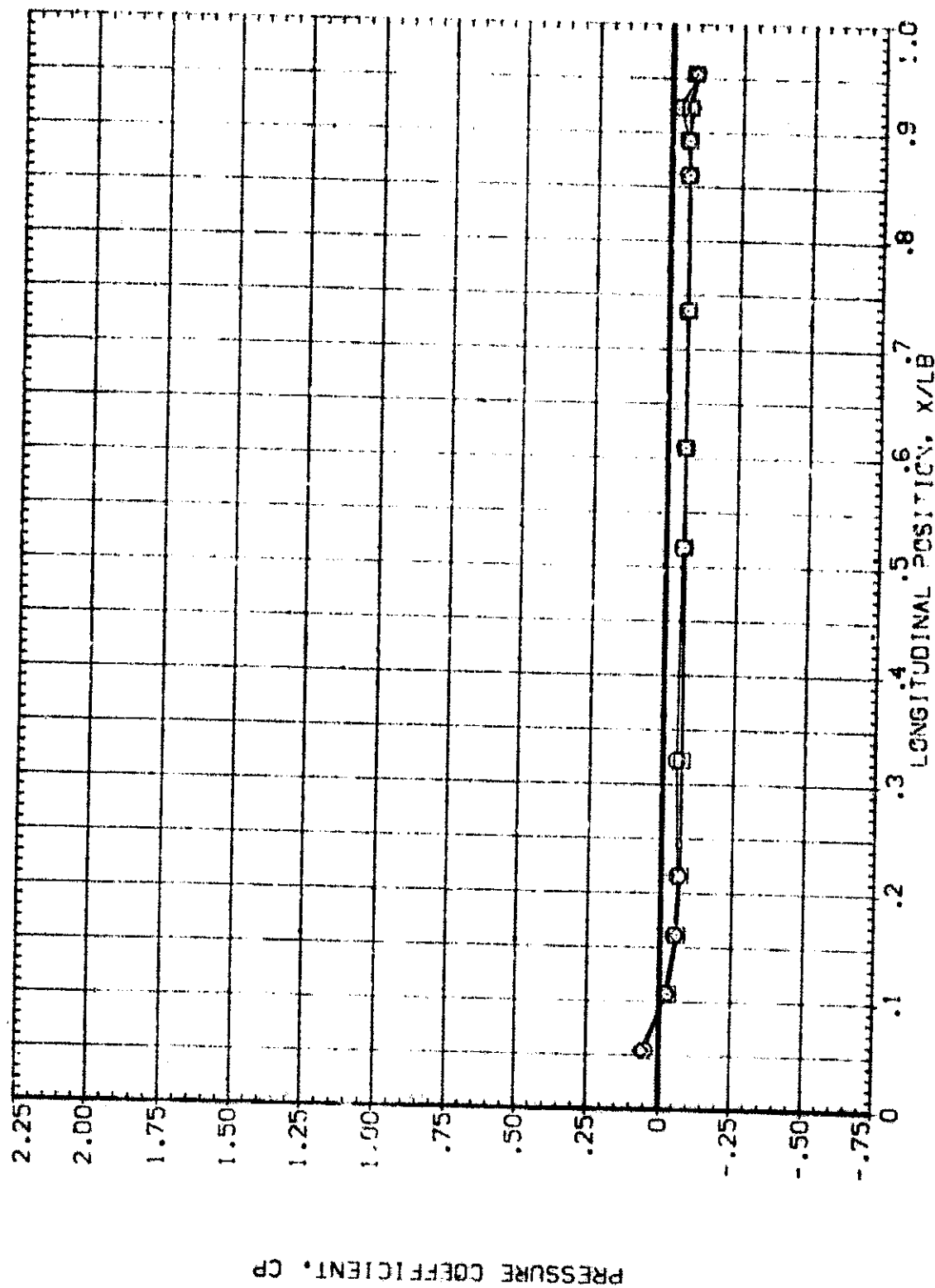


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIAD90)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	REF SET	20.000
□	112.500	28.700	3.480	1.000	PHI	45.000
○	135.000					
◇	157.500					

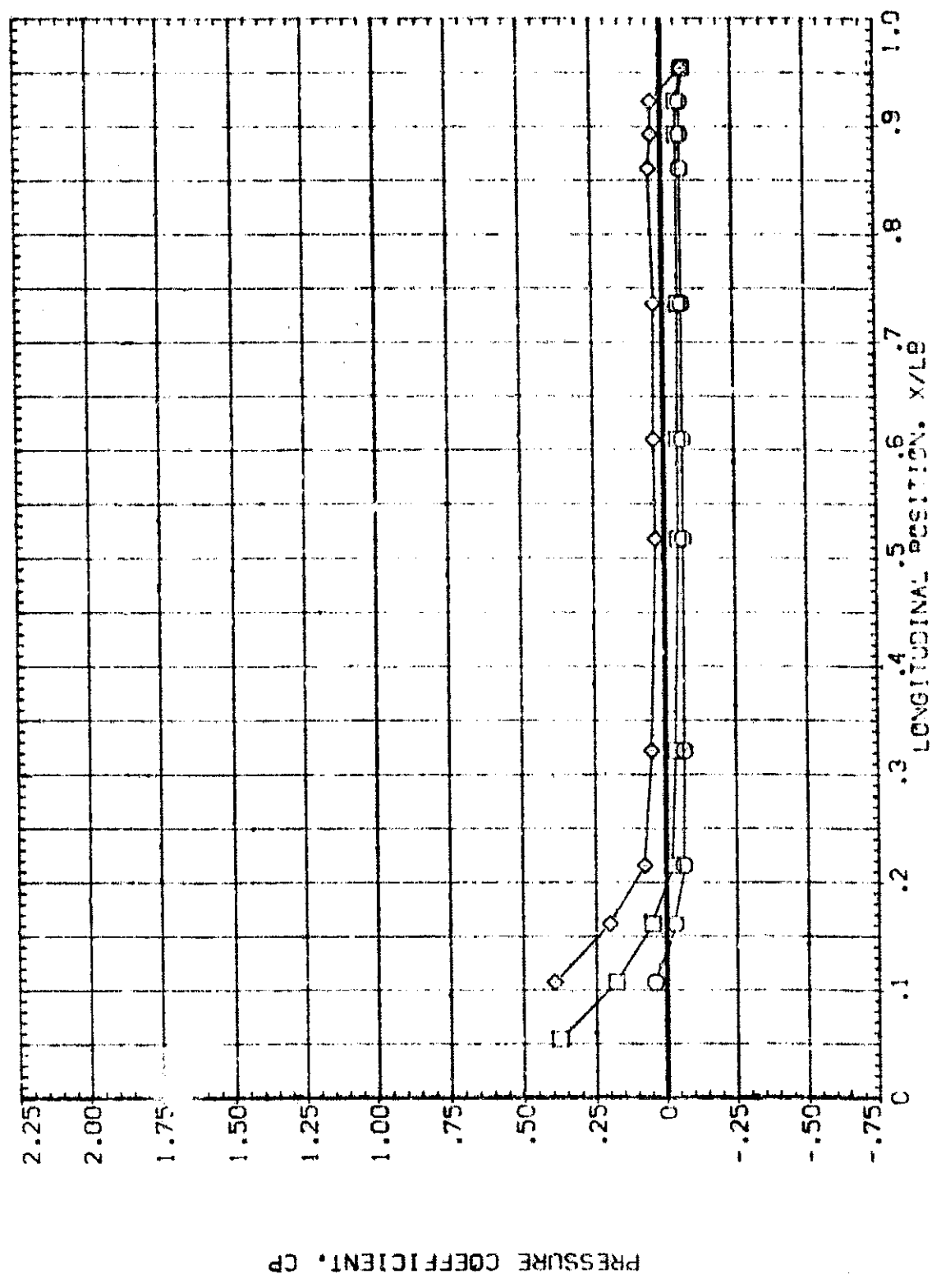


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA090)

SYMBOL  
○  
□  
◇

THETA  
180.000  
202.500  
225.000

ALPHA  
28.700

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI

20.000  
45.000

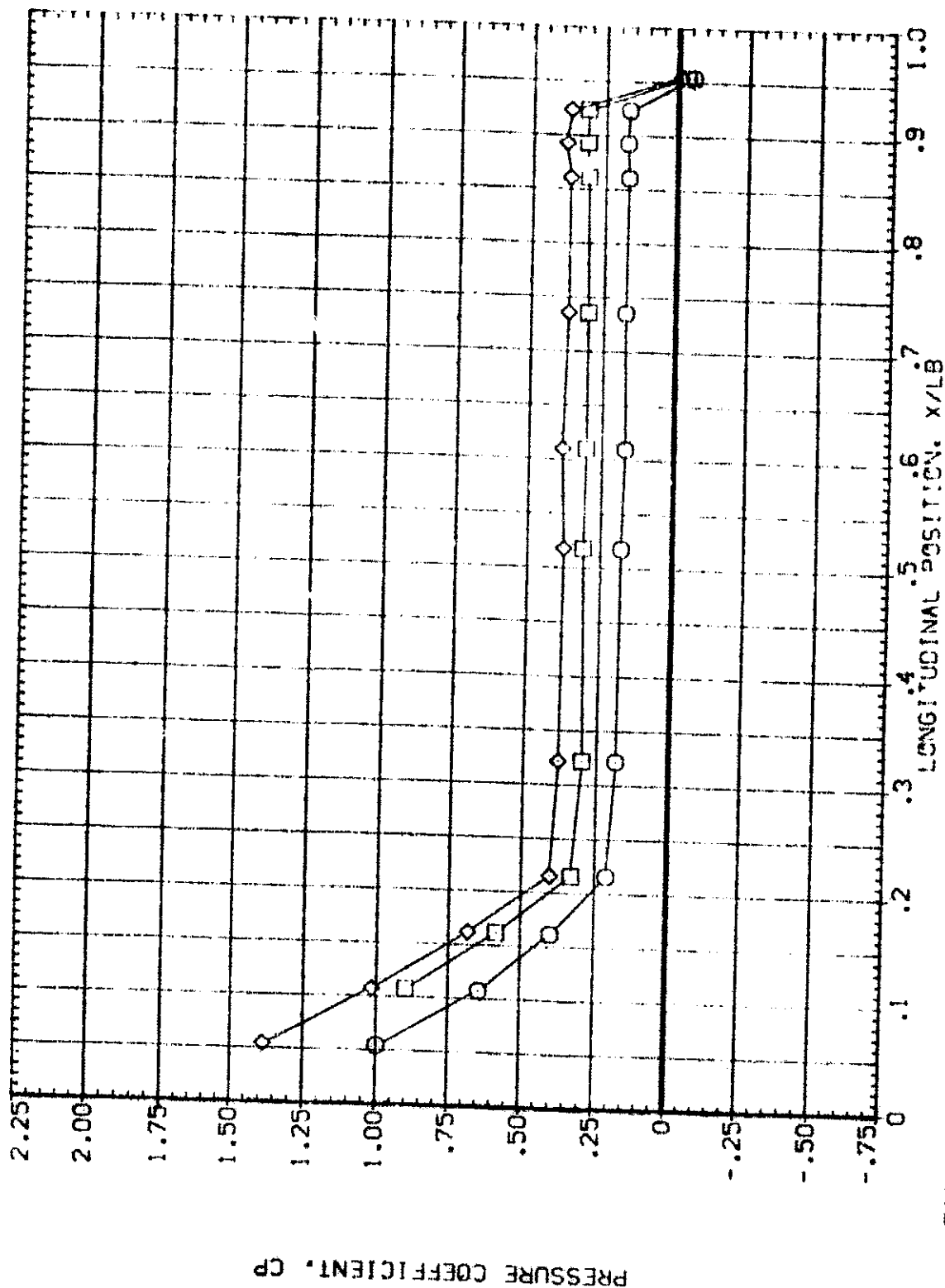


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA090)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
28.700

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
20.000  
45.000  
OFFSET  
PHI

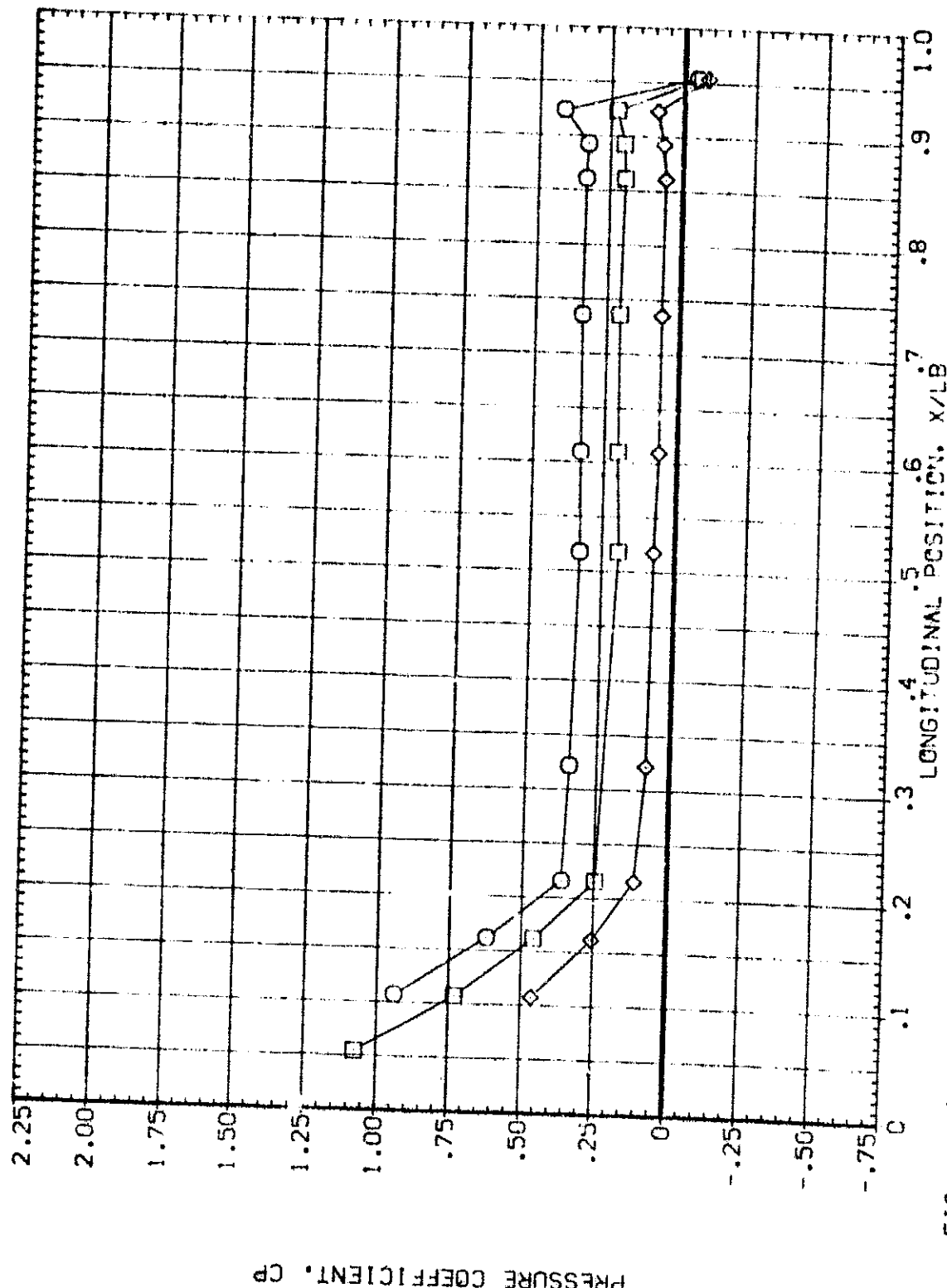


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
28.700

MACH  
3.460

(PIA090)

BETA  
COUNT

PARAMETRIC VALUES  
.000 OFFSET  
1.000 PH1  
20.000  
45.000

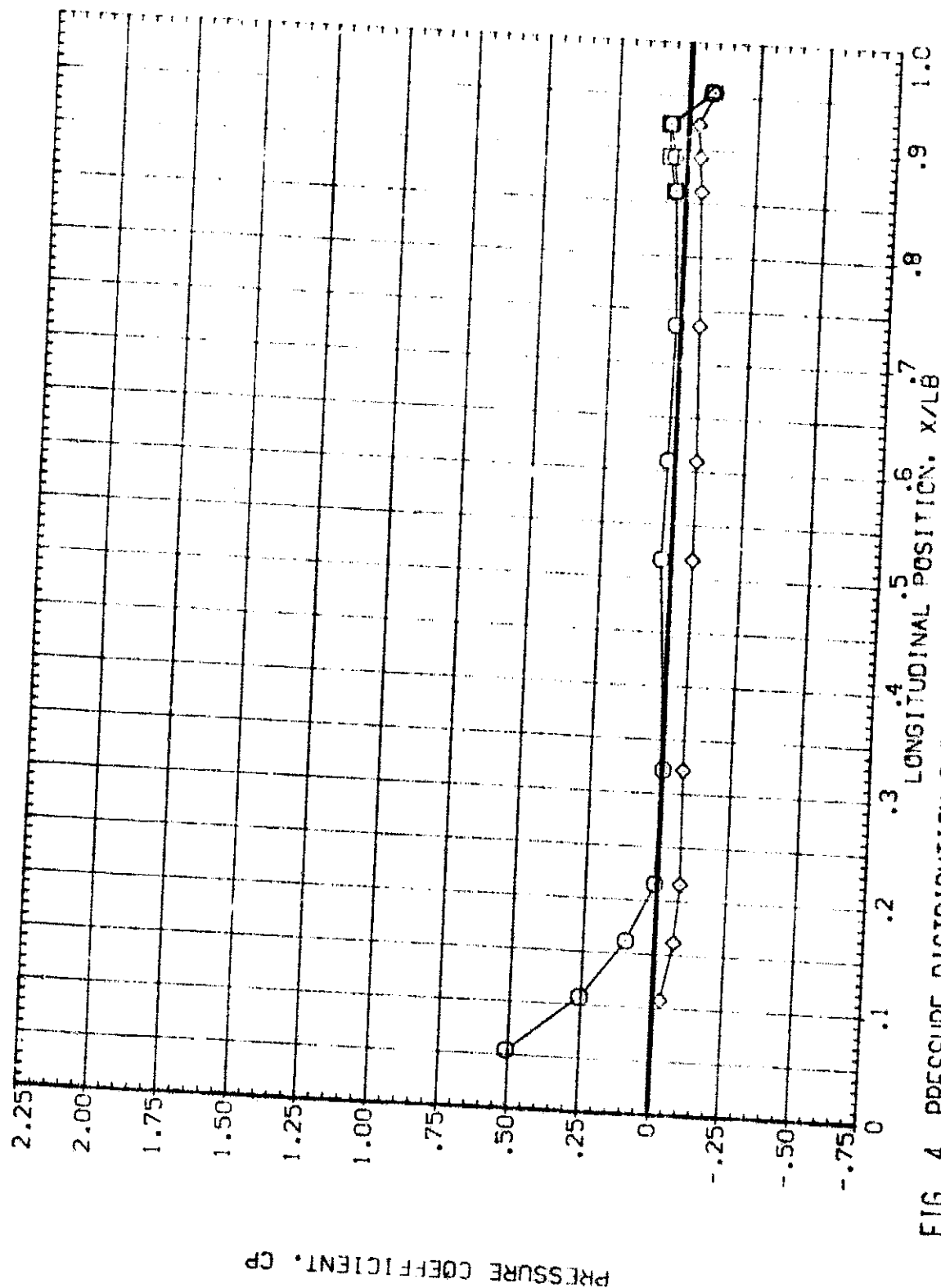


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A011)

SYMBOL  
 O  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 -8.360

MACH  
 3.490

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 PH1

.000  
 90.000

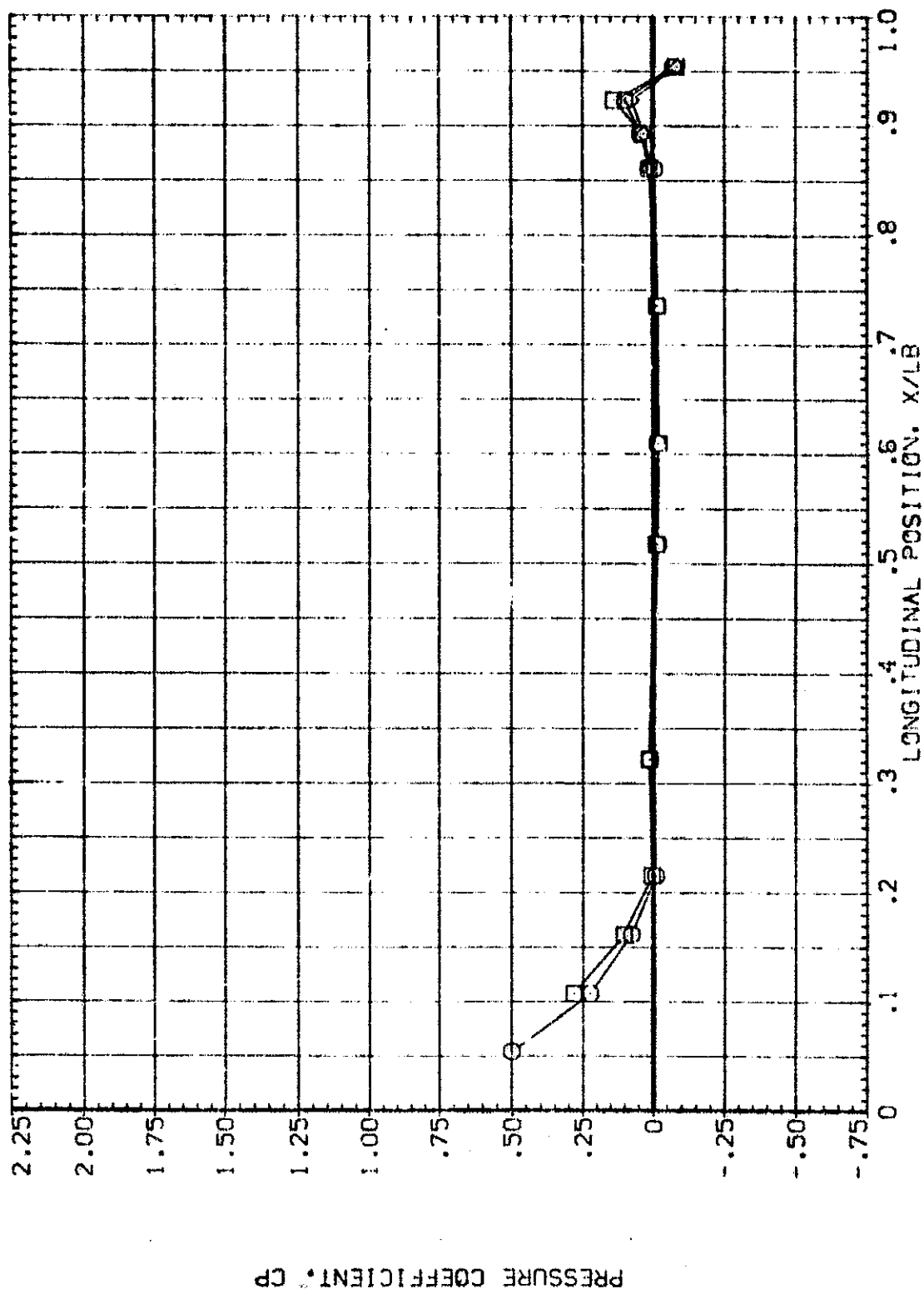


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



PARAMETRIC VALUES  
 .000 .000 .000  
 BETA OFFSET PHI  
 MOUNT 1.000 90.000

THETA ALPHA MACH  
 45.000 -8.360 3.480  
 67.500  
 90.000

SYMBOL  
 ◇ □ ○

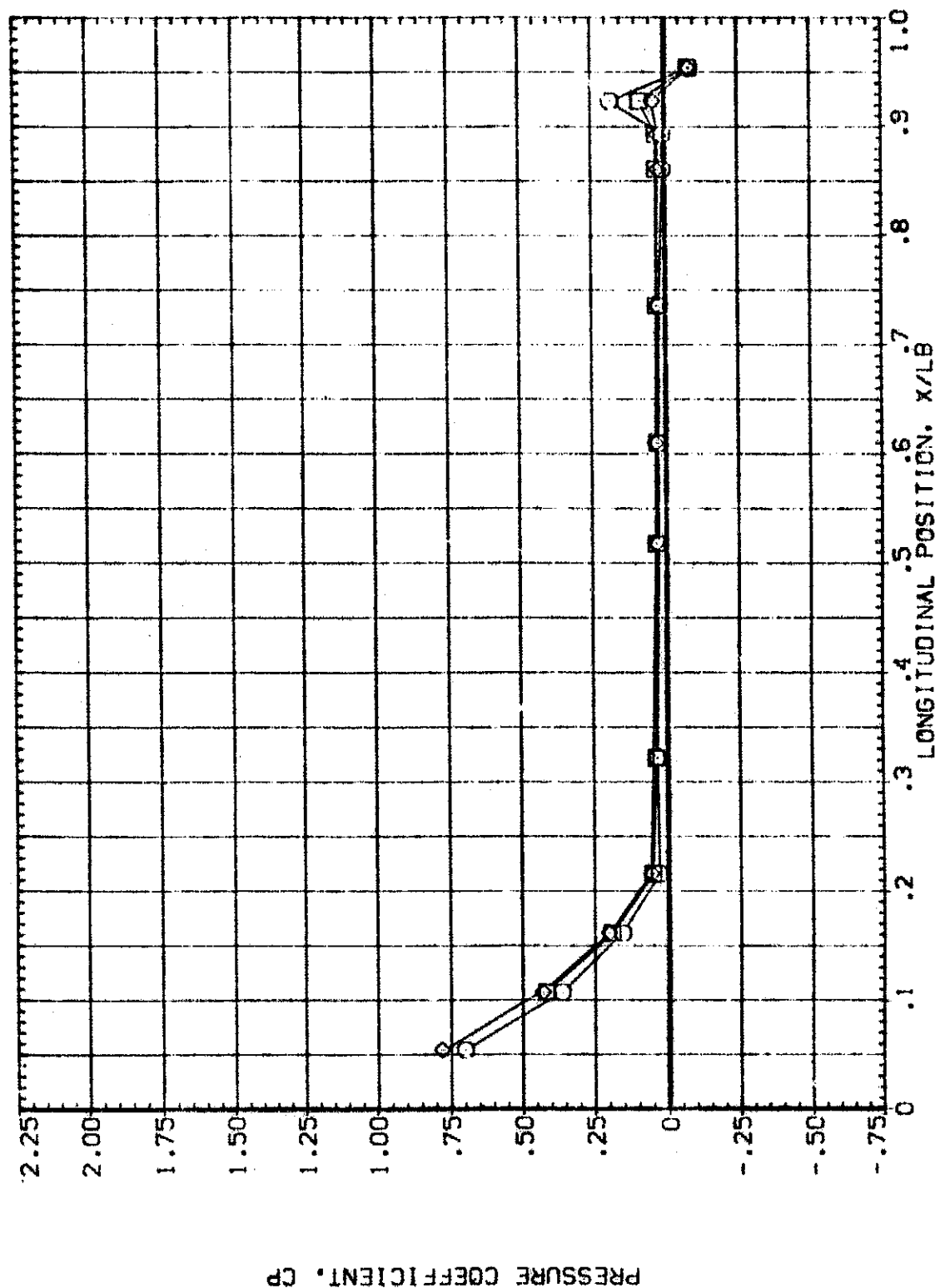


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK. T1 (PIA011)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	112.500	-8.360	3.480	.000	.000	.000
◇	135.000			1.000		90.000
◇	157.500					

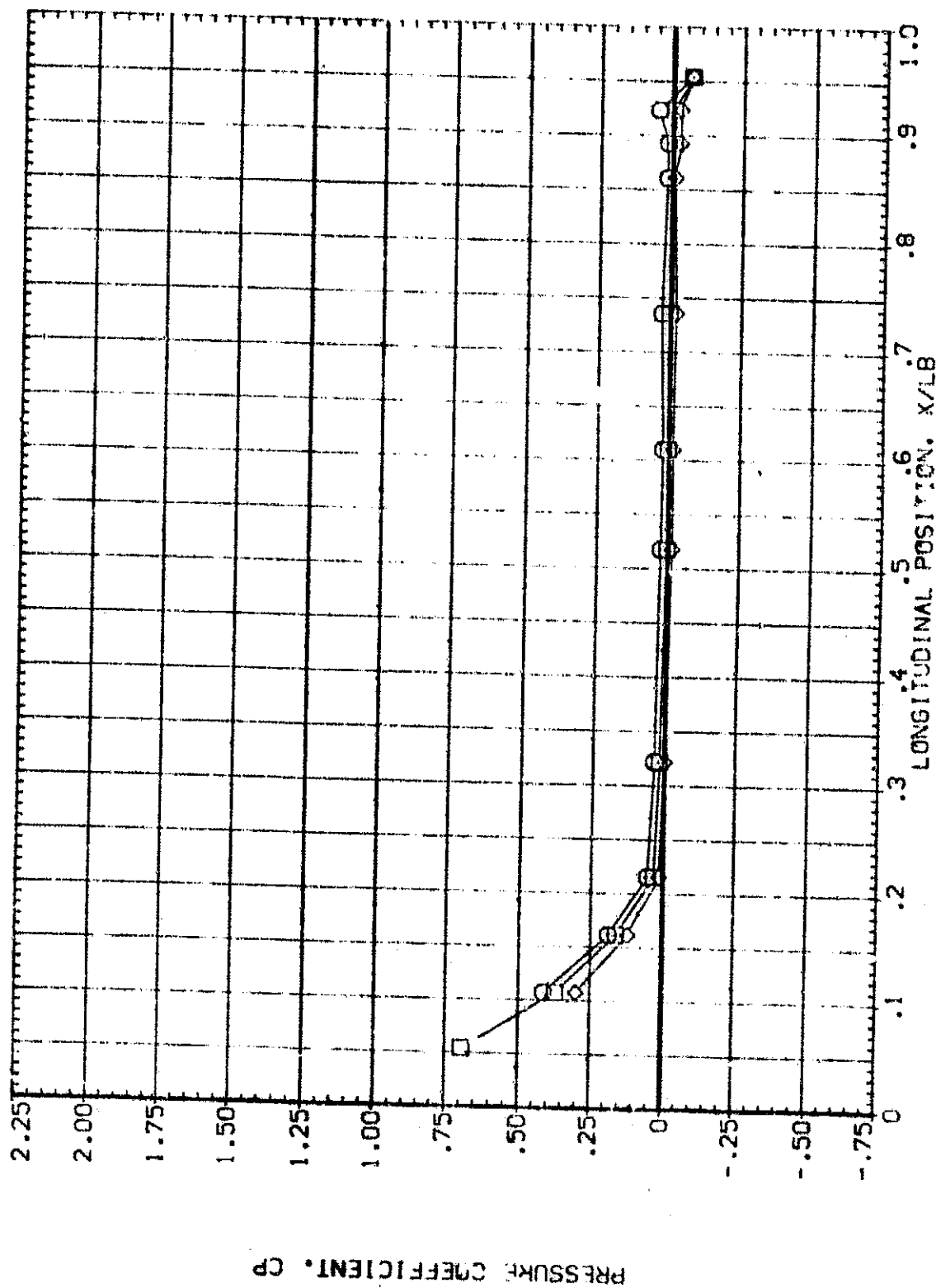


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIAD11)

SYMBOL  
○  
□  
◇

T-ETA 180.000  
232.500  
225.000  
ALPHA -8.360  
MACH 3.480

BETA .000  
MOUNT 1.000  
PARAMETRIC VALUES  
OFFSET .000  
PHI 90.000

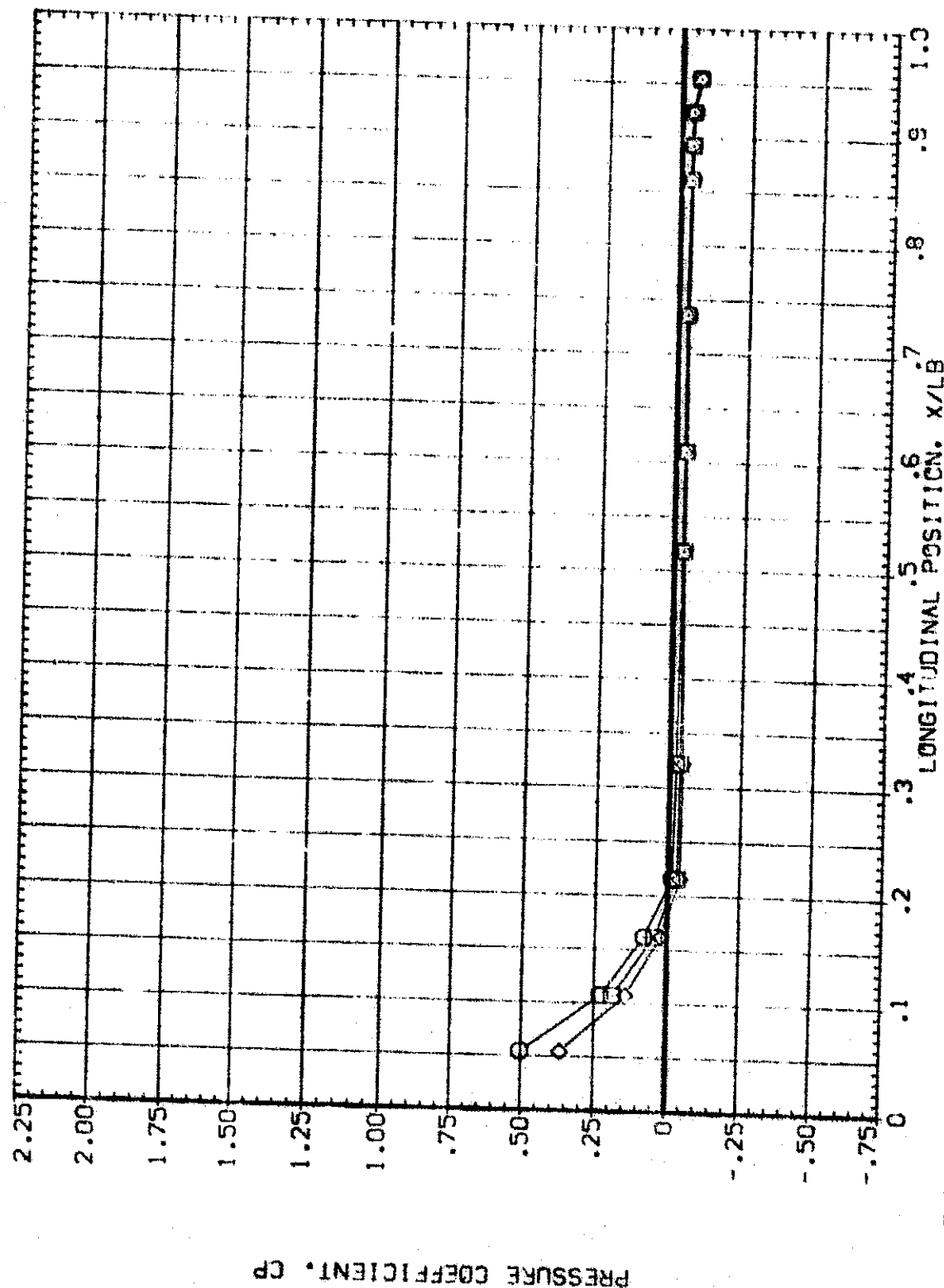


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A011)

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	247.500	-8.360	3.480	MOUNT	.000 OFFSET
□	270.000				1.000 PHI
◇	282.500				90.000

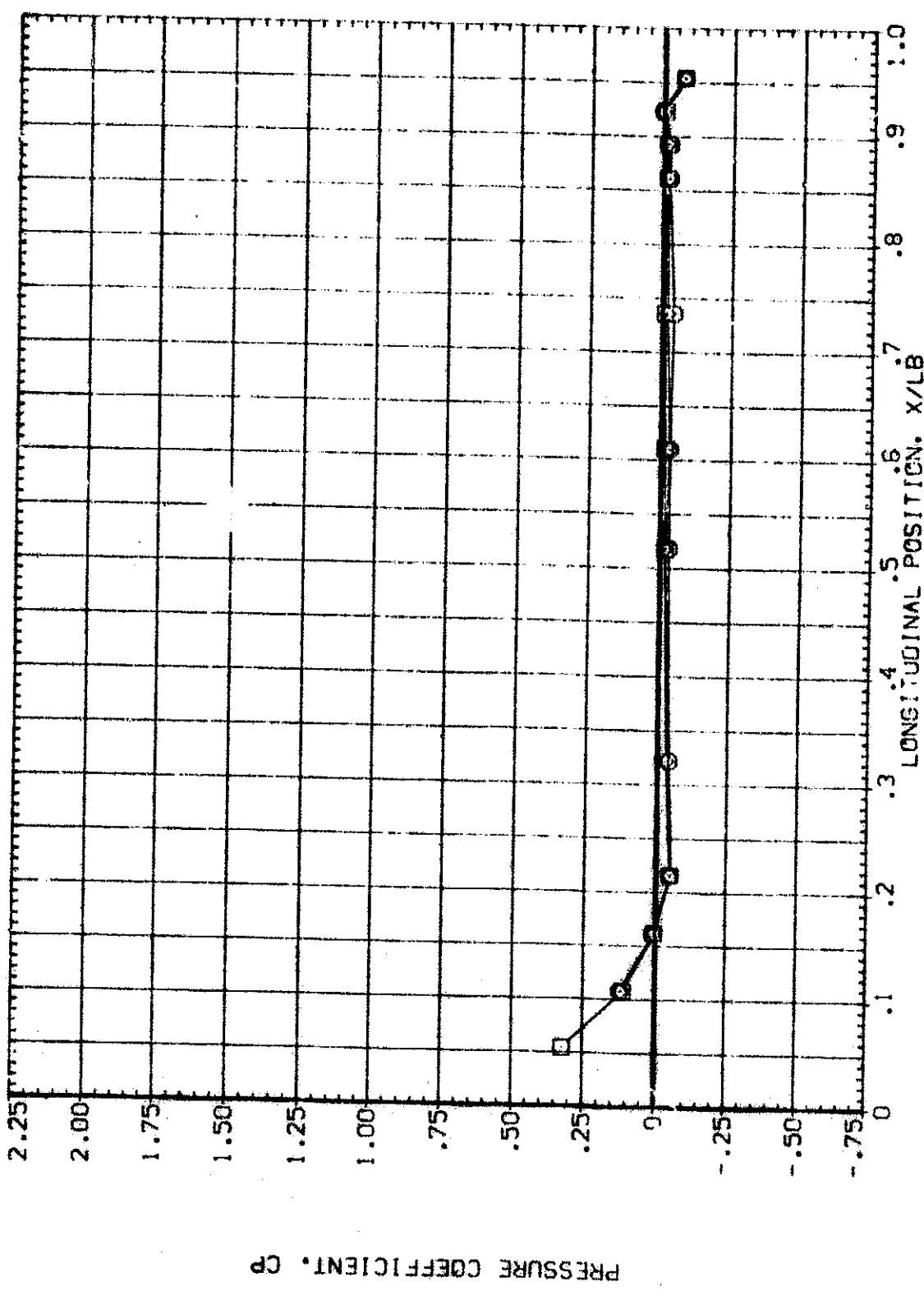


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A011)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 -8.360

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 PH: 90.000

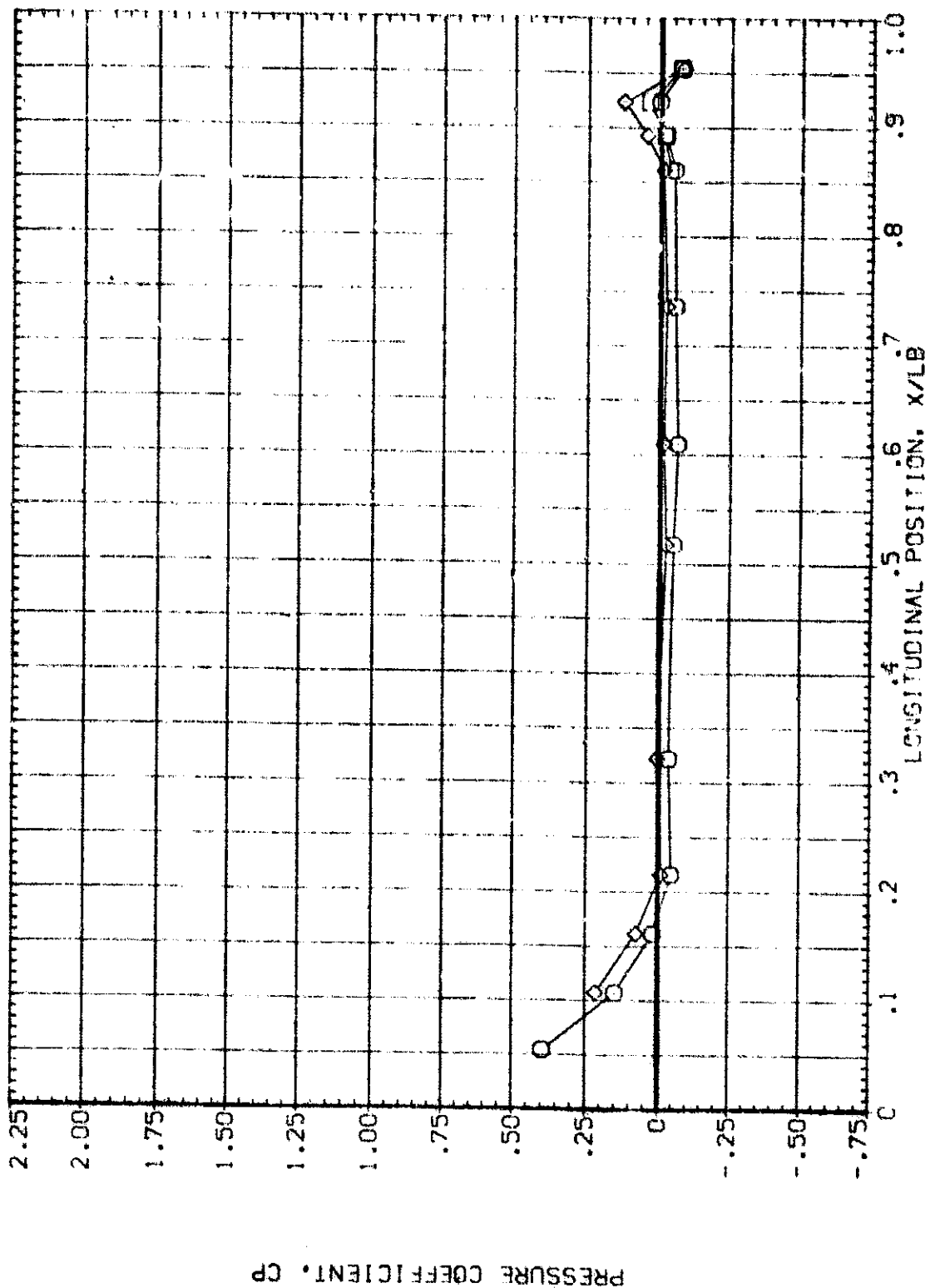


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA012)

SYMBOL  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 -4.330

MACH  
 3.480

BETA  
 .000  
 1.000  
 2.000

PARAMETRIC VALUES  
 OFFSET  
 PHI  
 .000  
 90.000

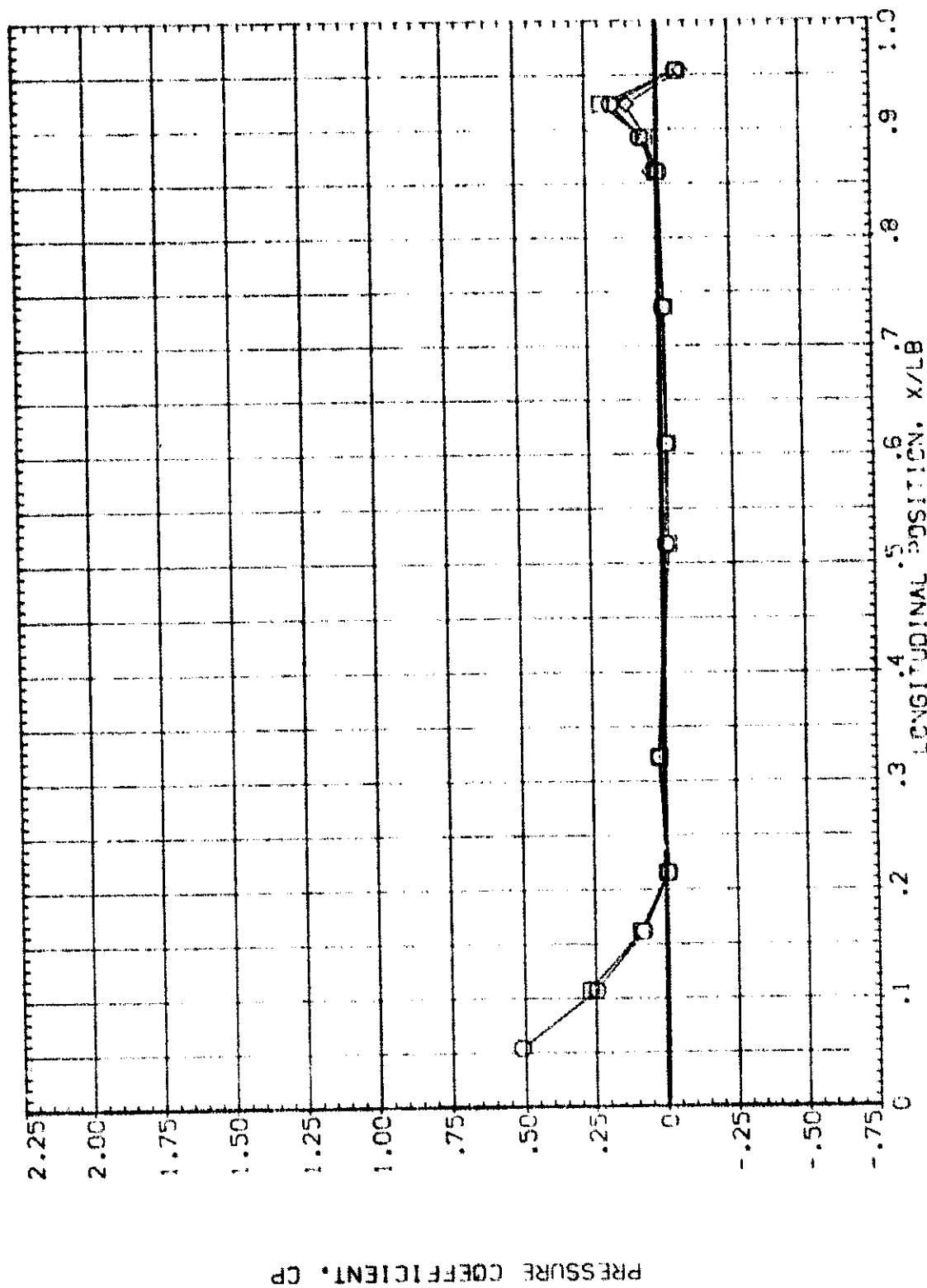


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA012)

SYMBOL  
□  
◇

THETA  
45.000  
67.500  
90.000

ALPHA  
-4.330

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
90.000

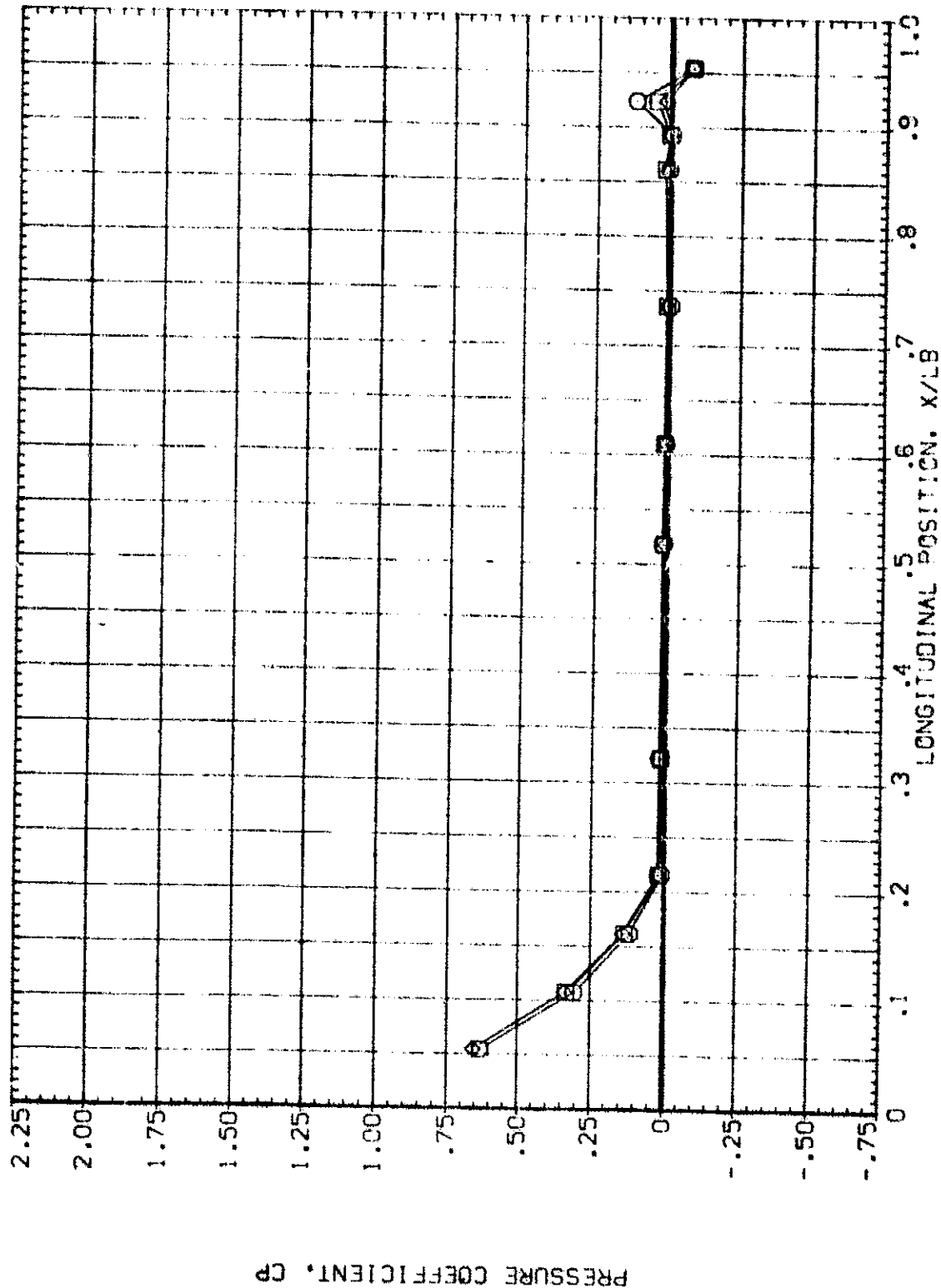


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA012)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	112.500	-4.330	3.480	.000	.000	.000
◇	135.000			1.000		90.000
	157.500					

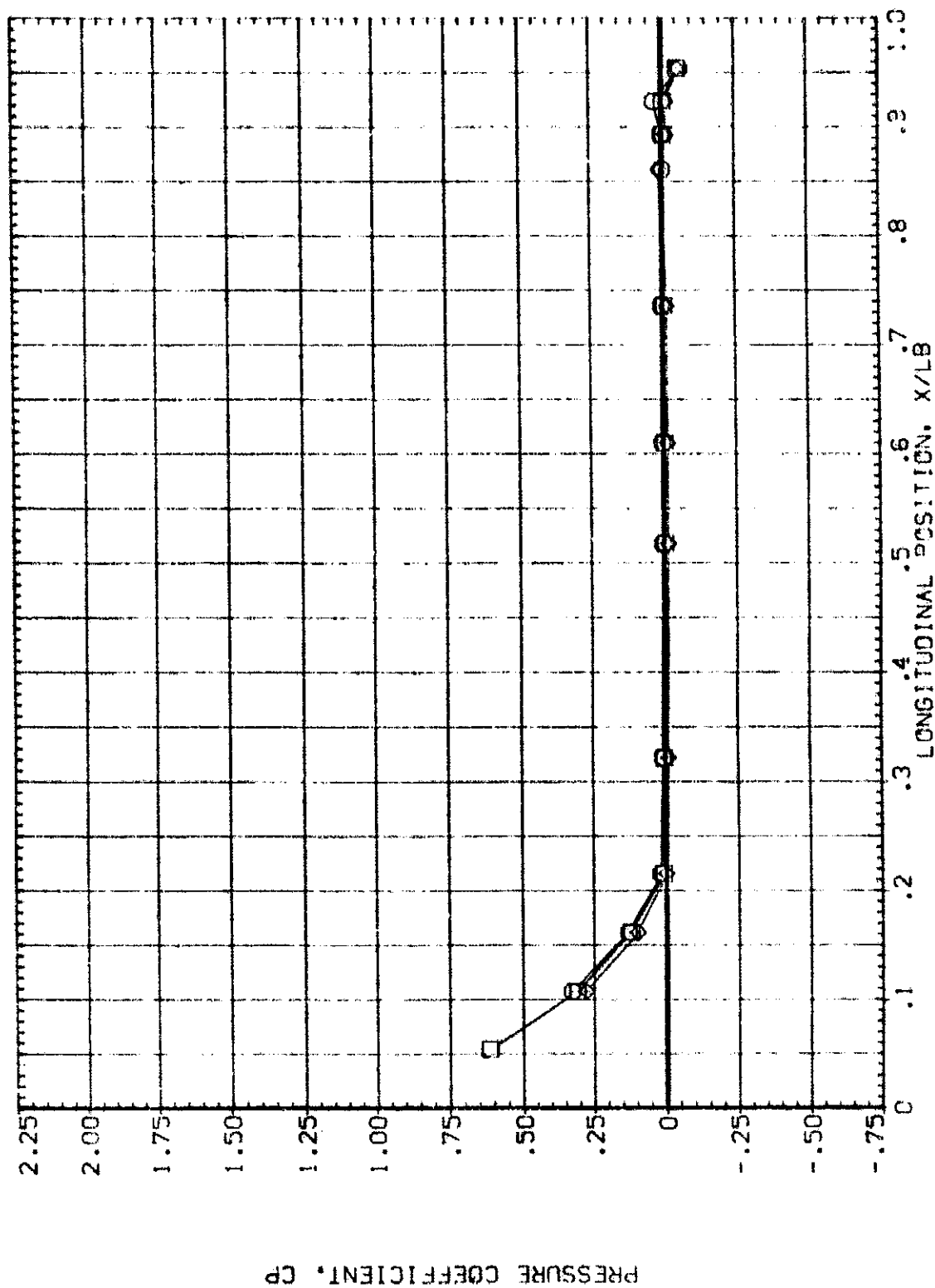


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL  
 ○  
 □  
 ◇

THETA 180.000  
 232.500  
 225.000

ALPHA -4.330

MACH 3.480

BETA MOUNT

PARAMETRIC VALUES  
 .000 .000 .000  
 1.000 OFFSET  
 PHI 90.000

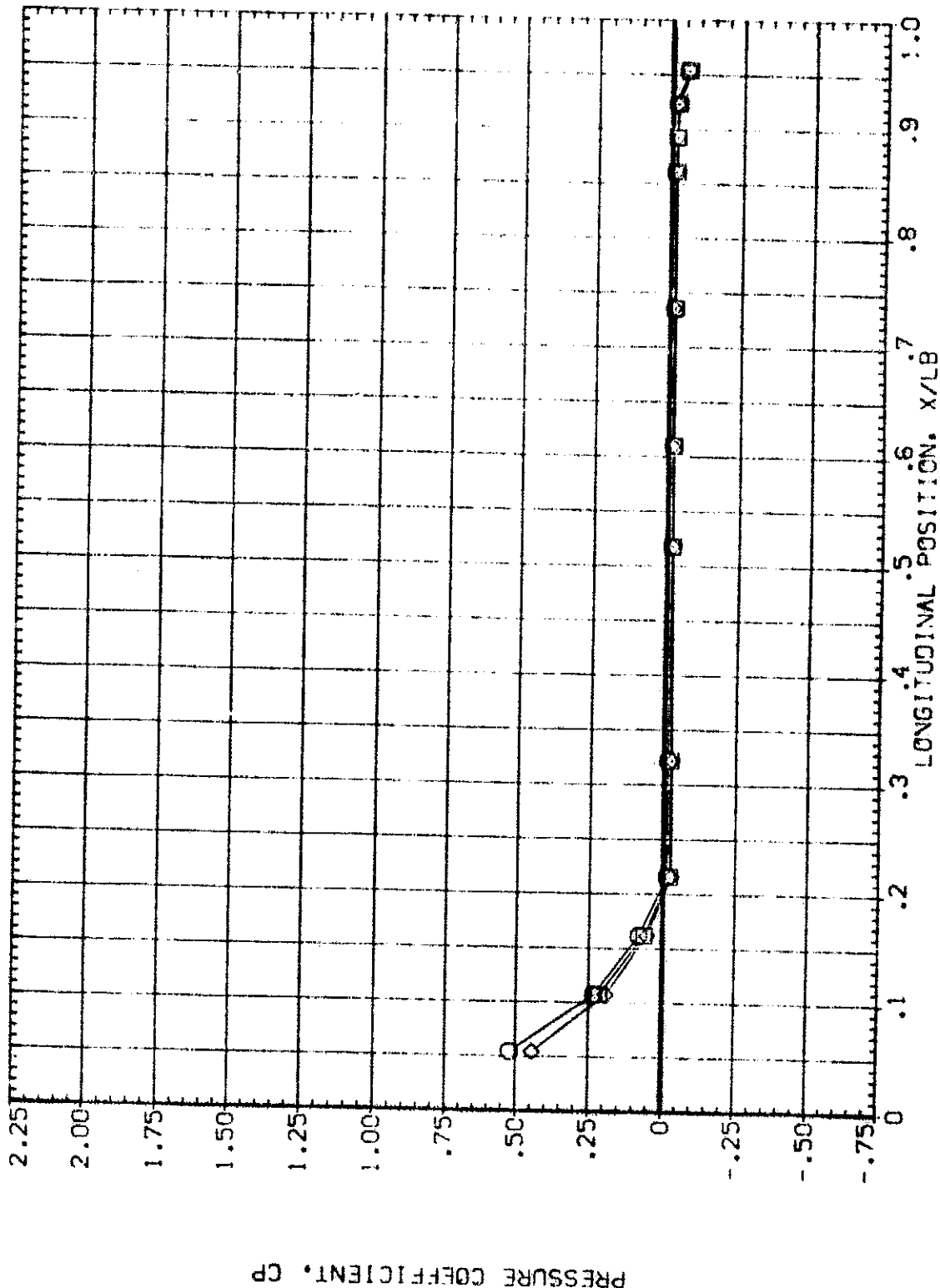


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A012)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 247.500  
 270.000  
 292.500

ALPHA  
 -4.330

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 90.000

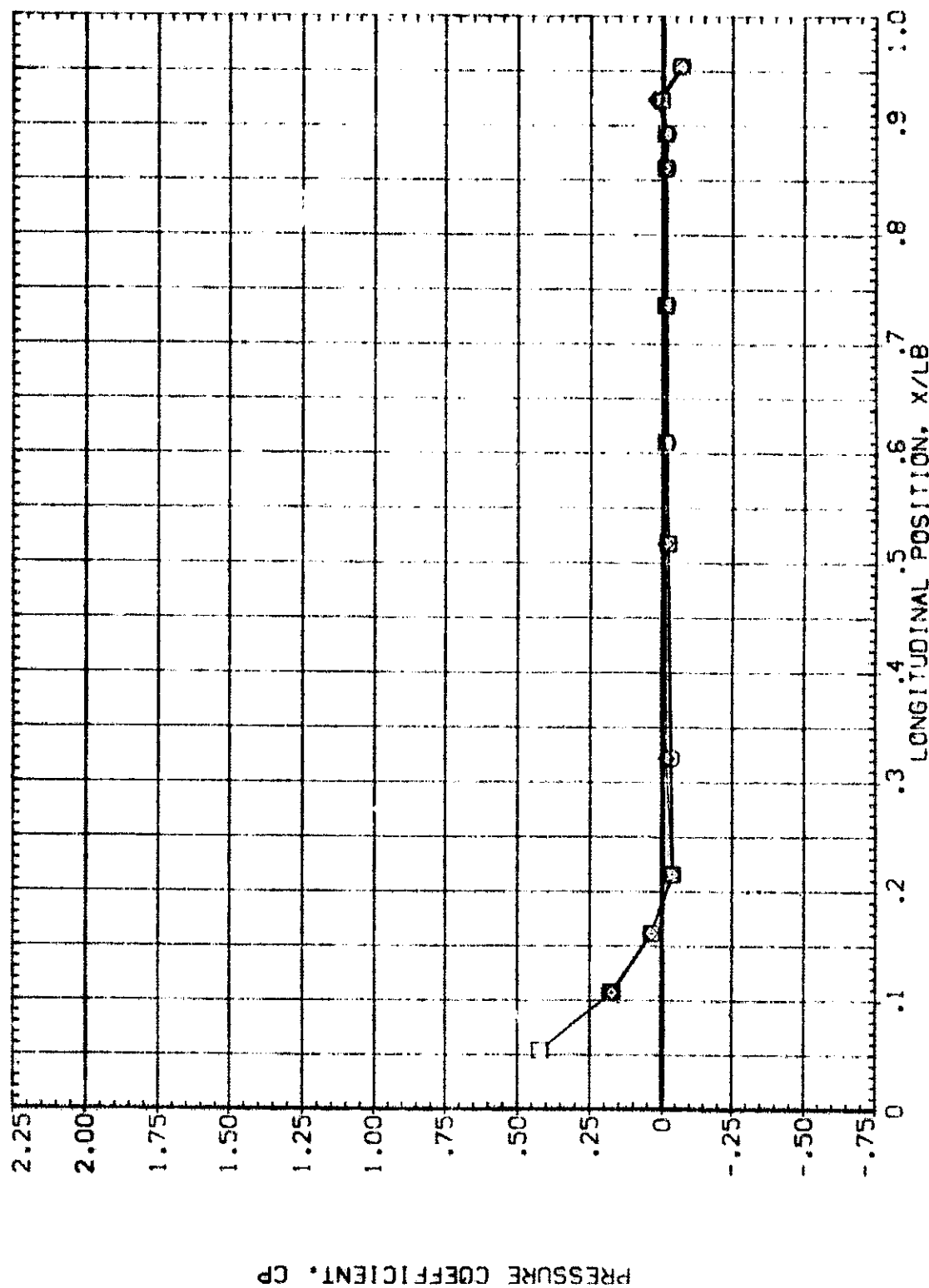


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA012)

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	-4.330	3.480	0.000	.000
□	326.000			1.000	OFFSET
◇	346.000			PHI	90.000

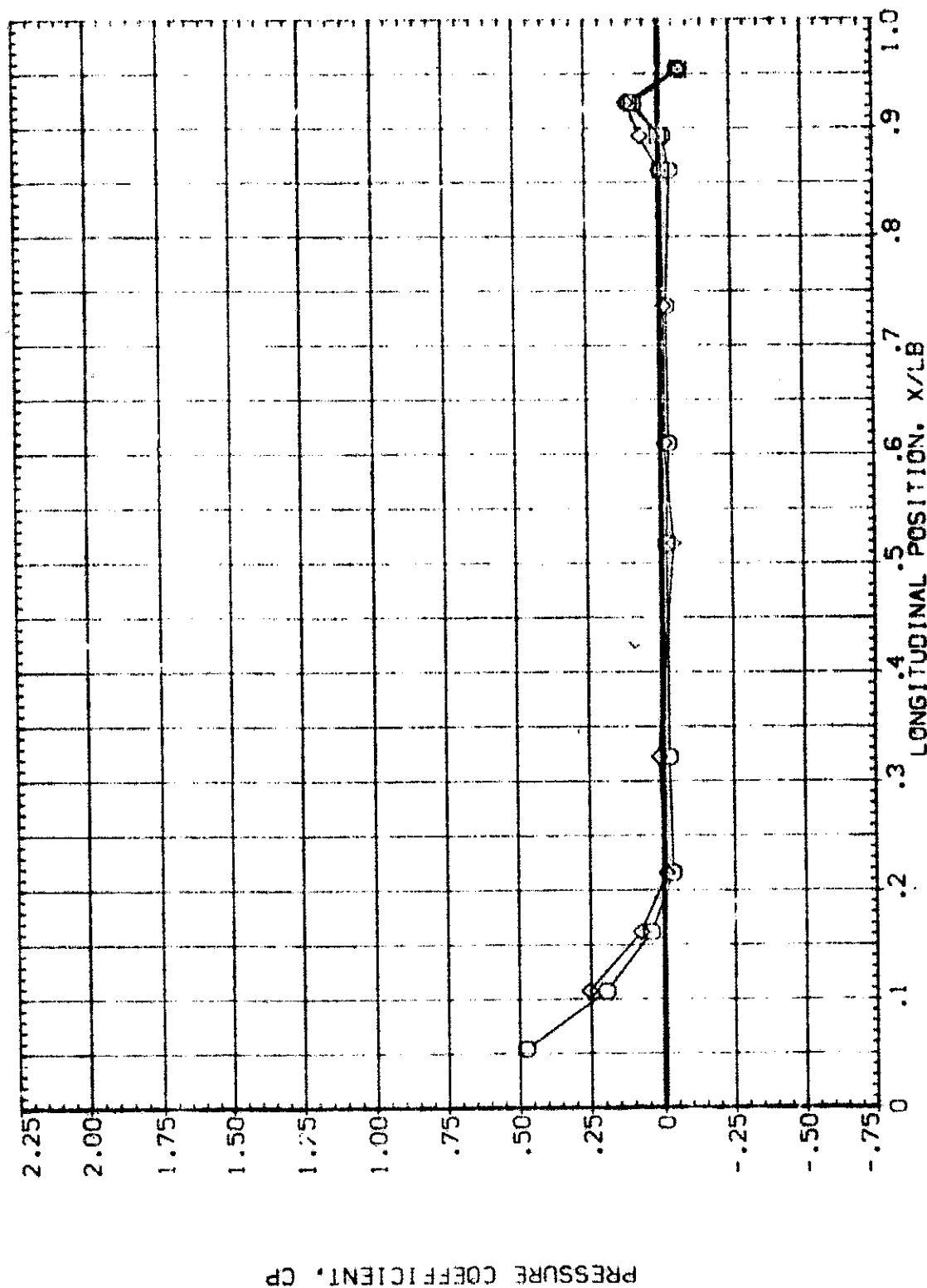


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A013)

SYMBOL  
◇  
□

THETA  
-0.000  
14.000  
24.000

ALPHA  
-0.280

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI

.000  
90.000

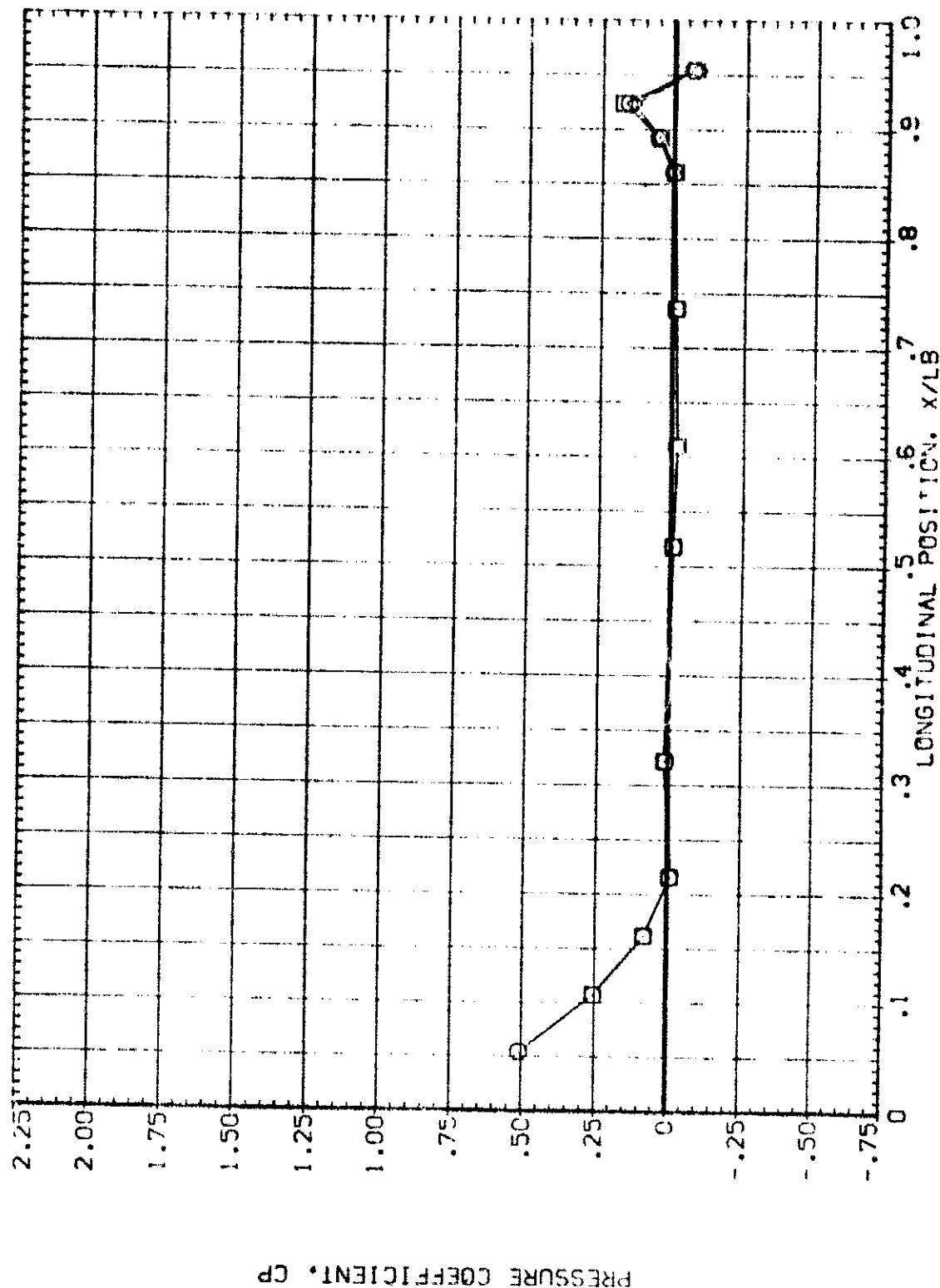


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

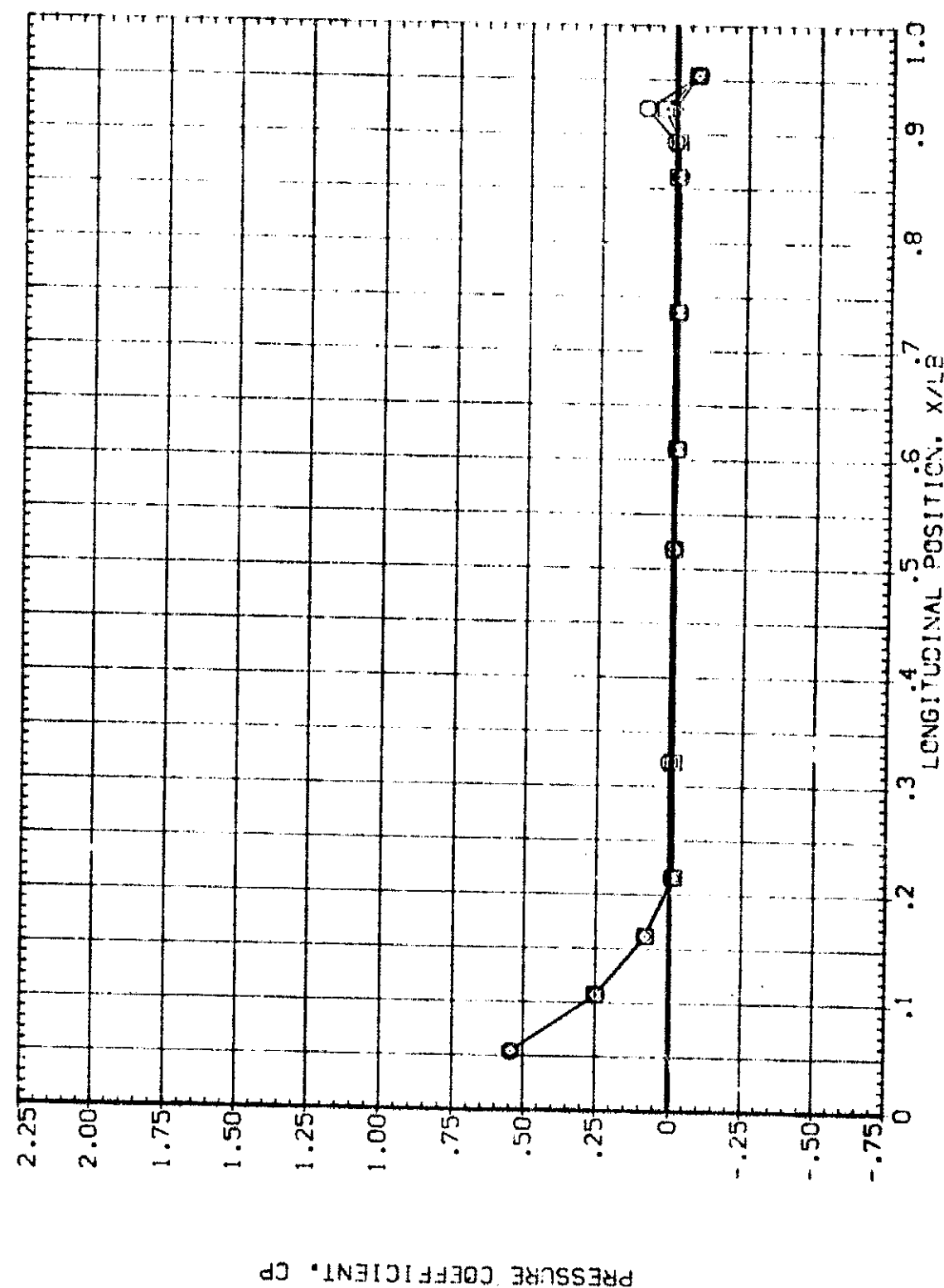
THETA  
 45.000  
 87.500  
 90.000

ALPHA  
 -.280

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI  
 .000  
 90.000



PRESSURE COEFFICIENT, CP

LONGITUDINAL POSITION, X/LB

FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUDANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA013)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	- .280	3.480	.000	.000	.000
□	135.000			1.000		90.000
◇	157.500					

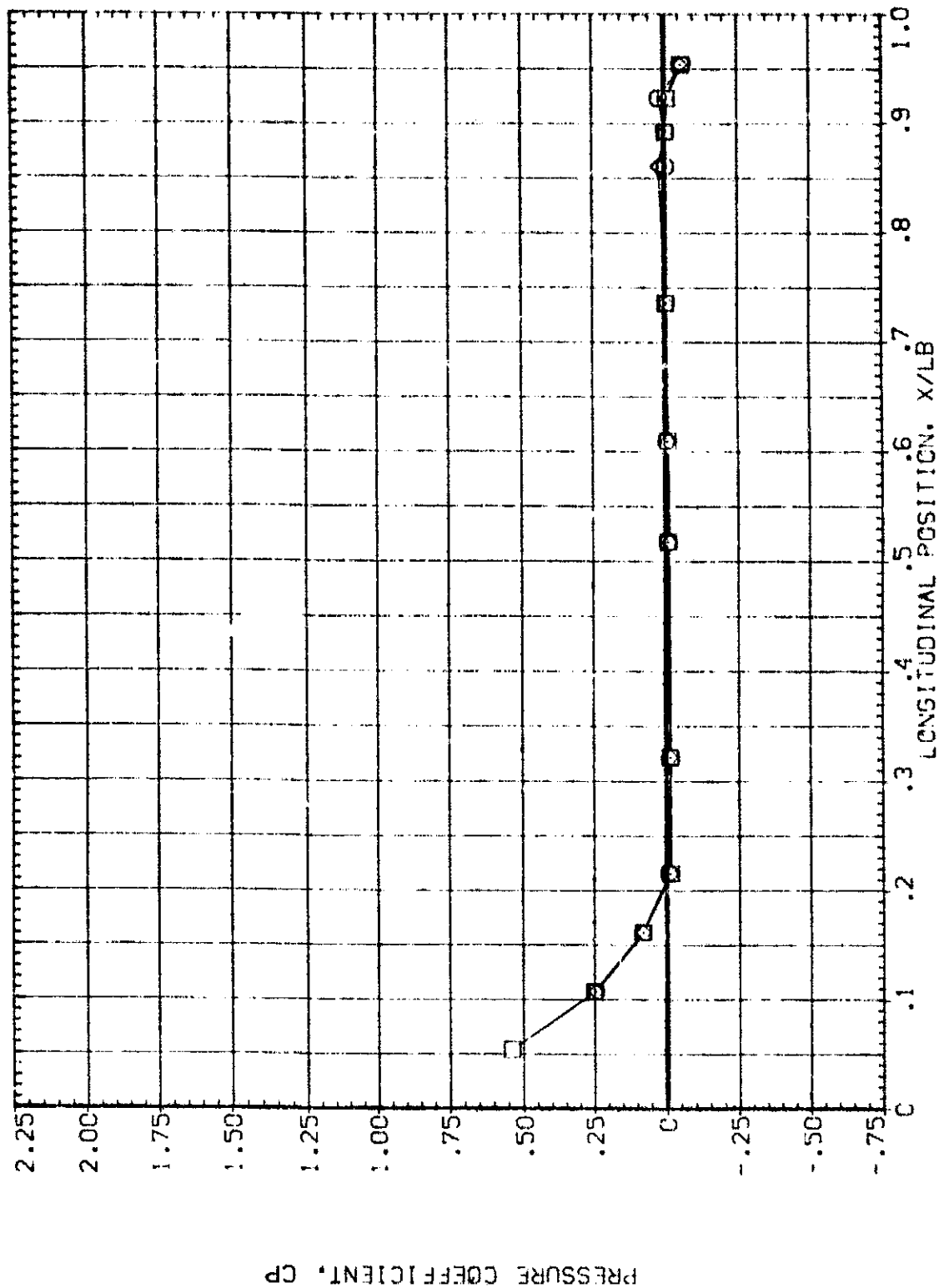


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 □  
 ◇

THETA  
 180.000  
 202.500  
 225.000

ALPHA  
 -.280

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 90.000  
 PH

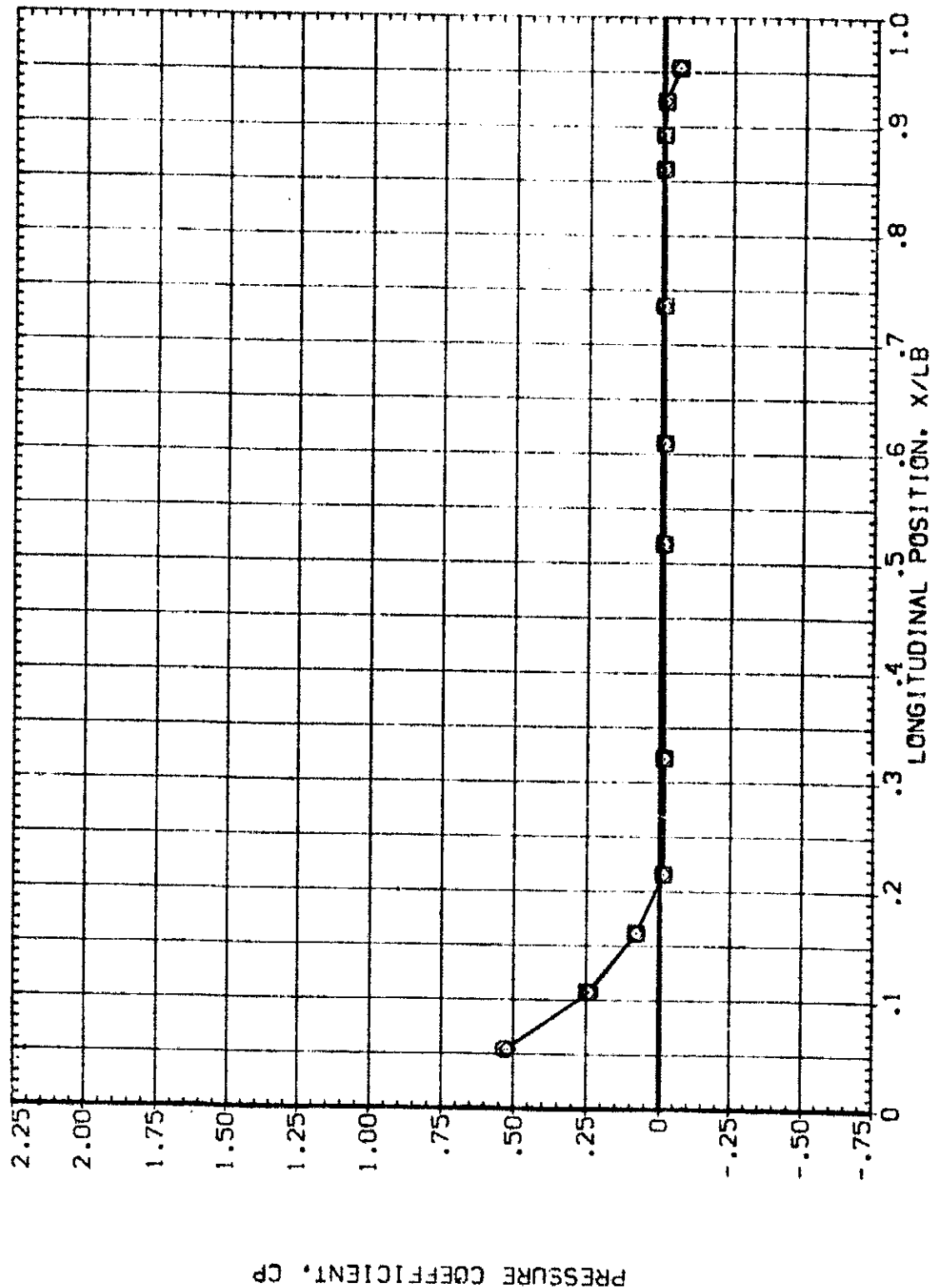


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A013)

SYMBOL  
 □  
 ◇

THETA  
 7.500  
 470.000  
 292.500

ALPHA  
 -.280

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 90.000

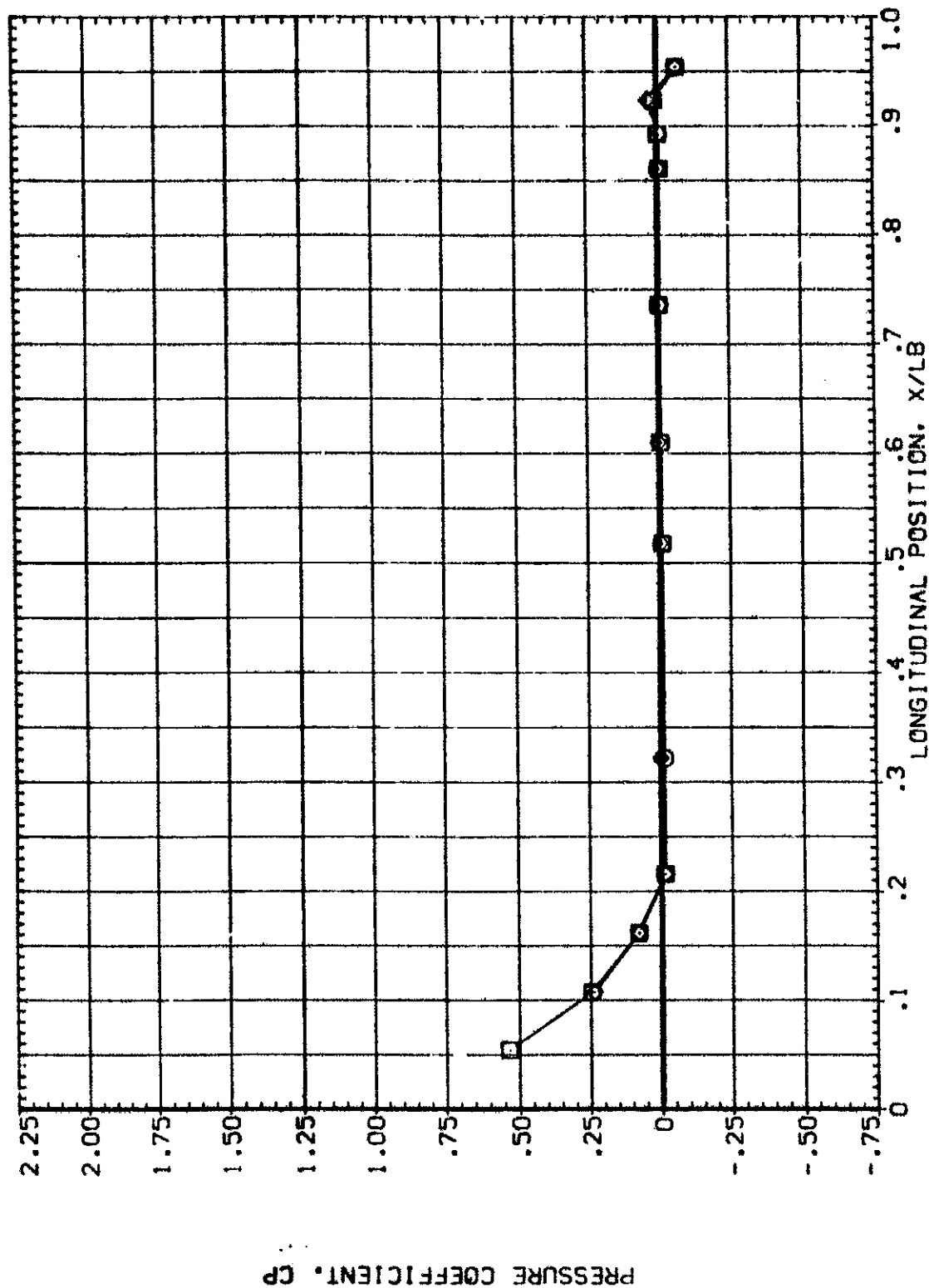


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



# MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (P1A013)

SYMBOL  
 ○ □ ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 -.280

MACH  
 3.490

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 PHI  
 90.000

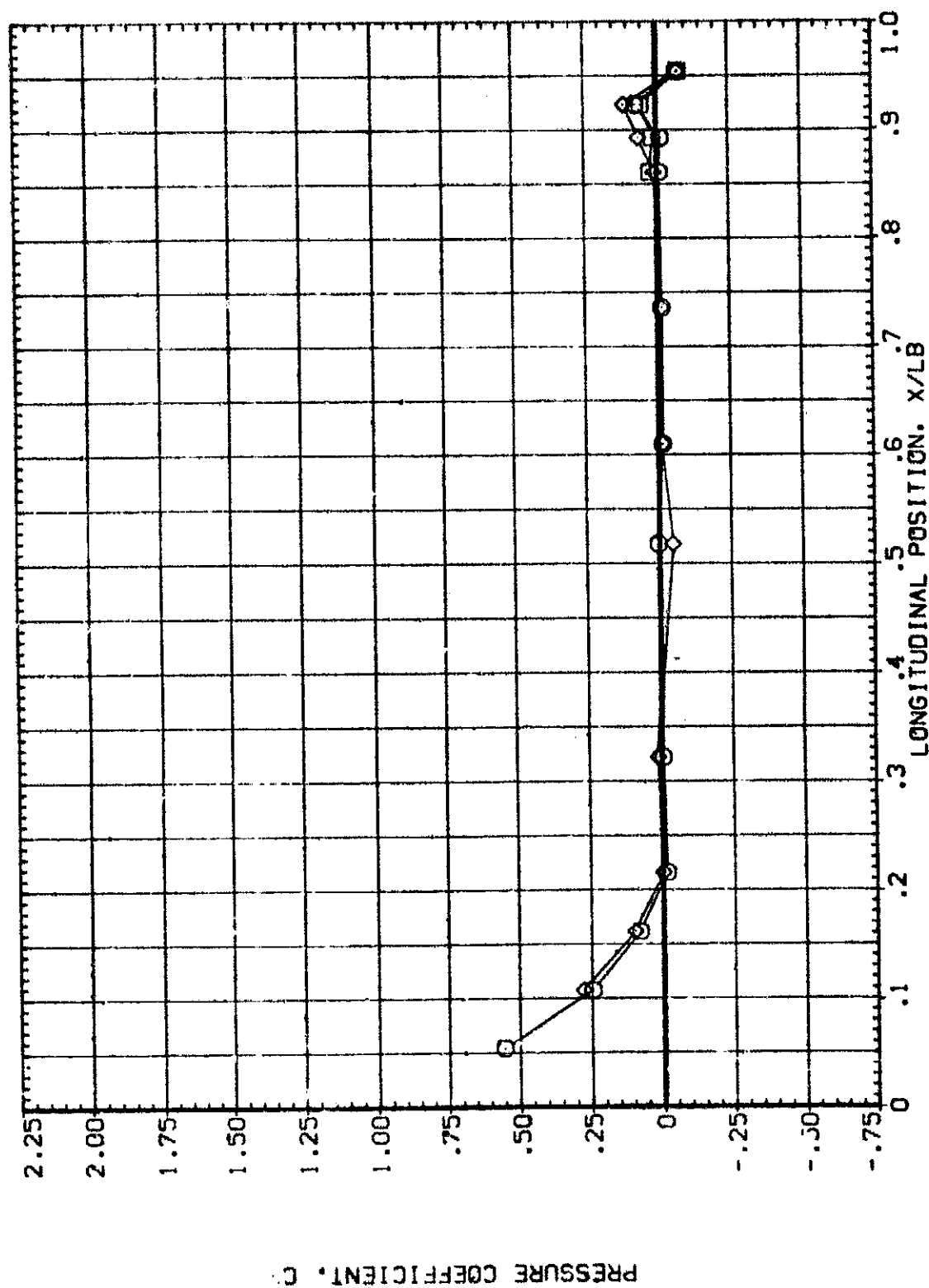


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P.A014)

SYMBOL  
□  
◇

THETA .000  
14.000  
24.000

ALPHA 3.770

MACH 3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000 .000  
1.000 OFFSET  
PHI 90.000

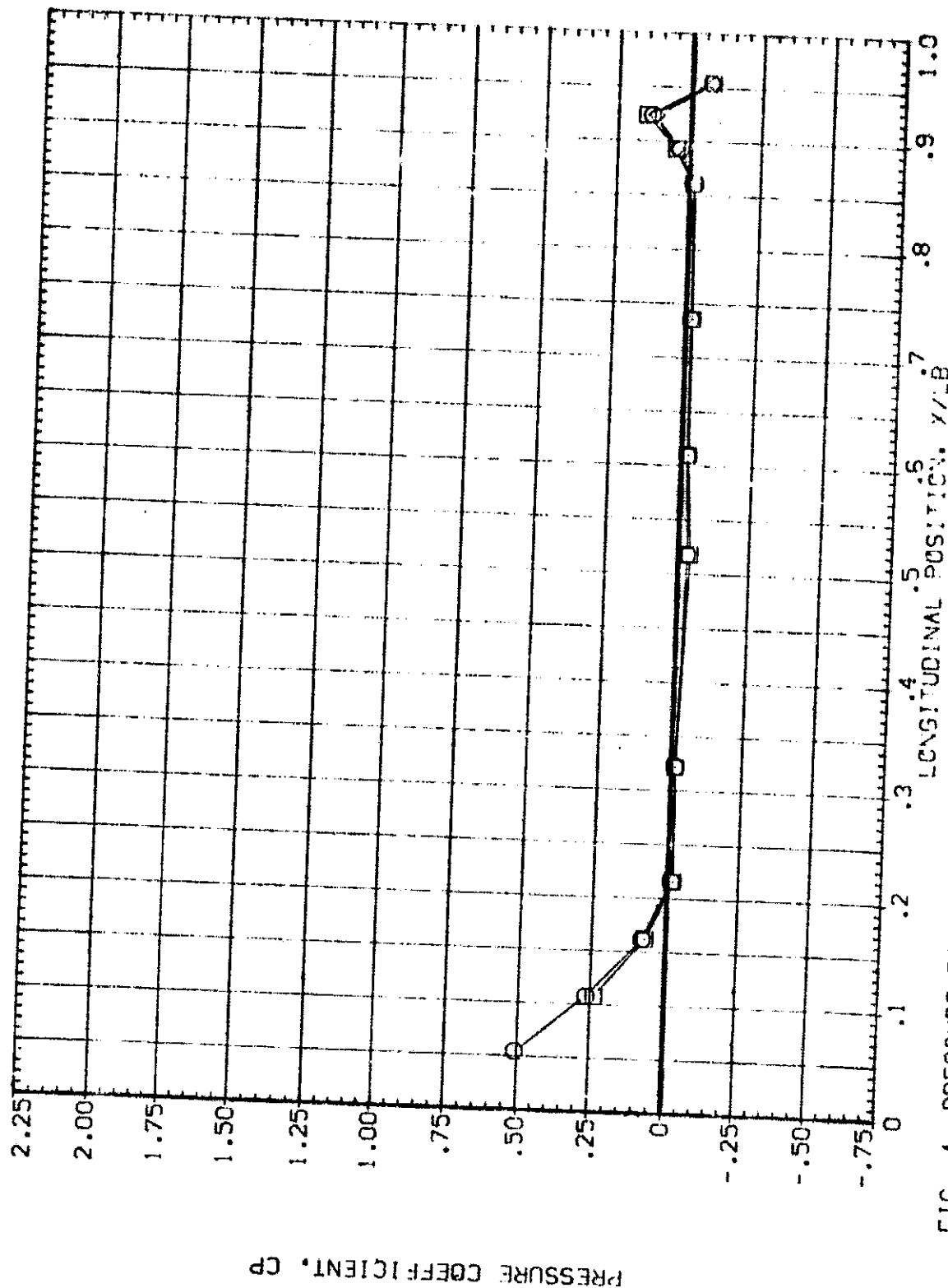


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A014)

SYMBOL  
 ◇  
 □  
 ○

THETA 45.000  
 67.500  
 90.000

ALPHA 3.770

MACH 3.480

PARAMETRIC VALUES

BETA	OFFSET	PHI
1.000	.000	.000
1.000	.000	90.000

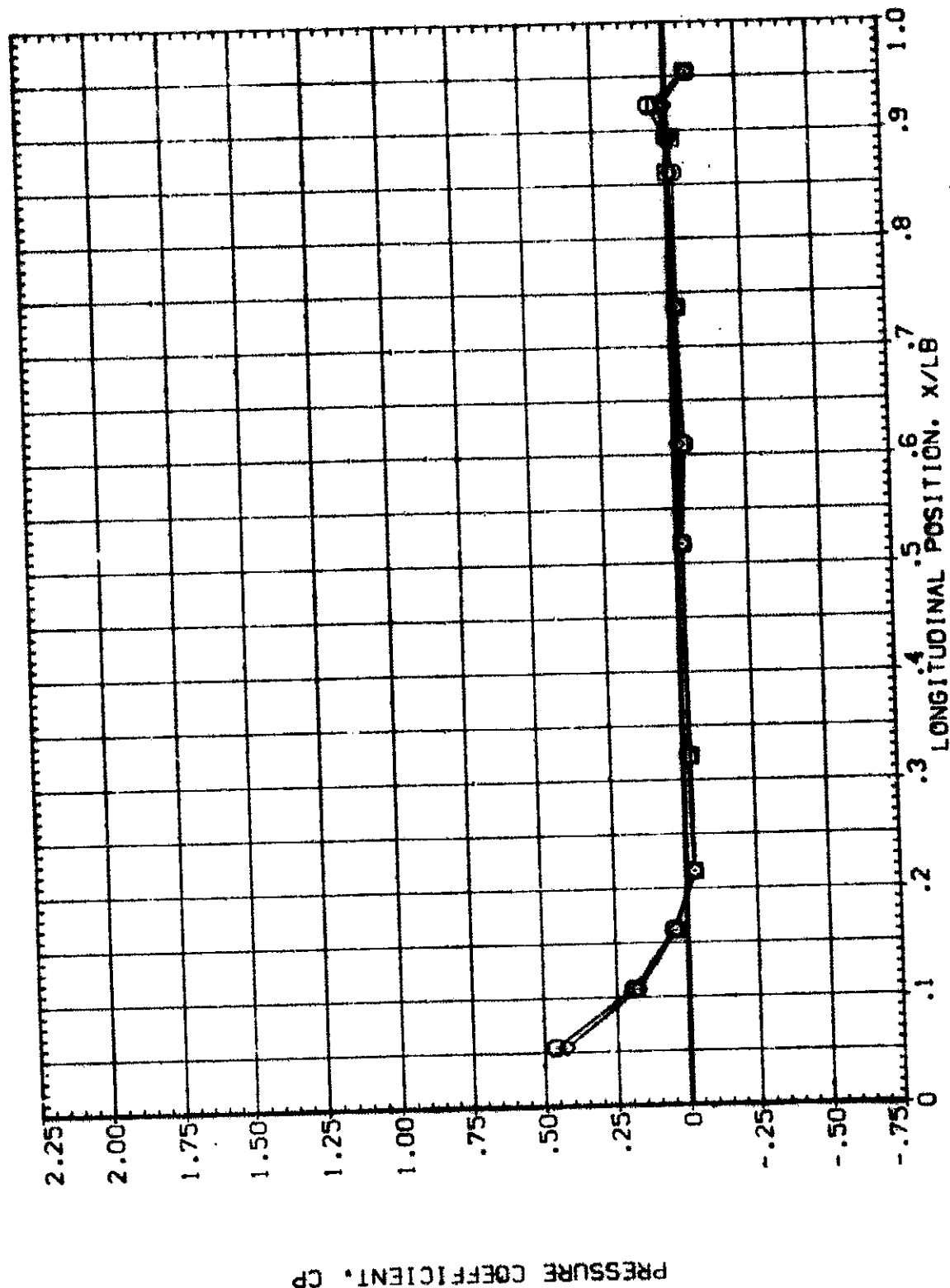


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 59E (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA014)

SYMBOL	PARAMETRIC VALUES		
	THETA	ALPHA	MACH
◇	112.500	3.770	3.480
□	135.000		
◇	157.500		
		BETA	OFFSET
		POINT	PM
			.000
			1.000
			90.000

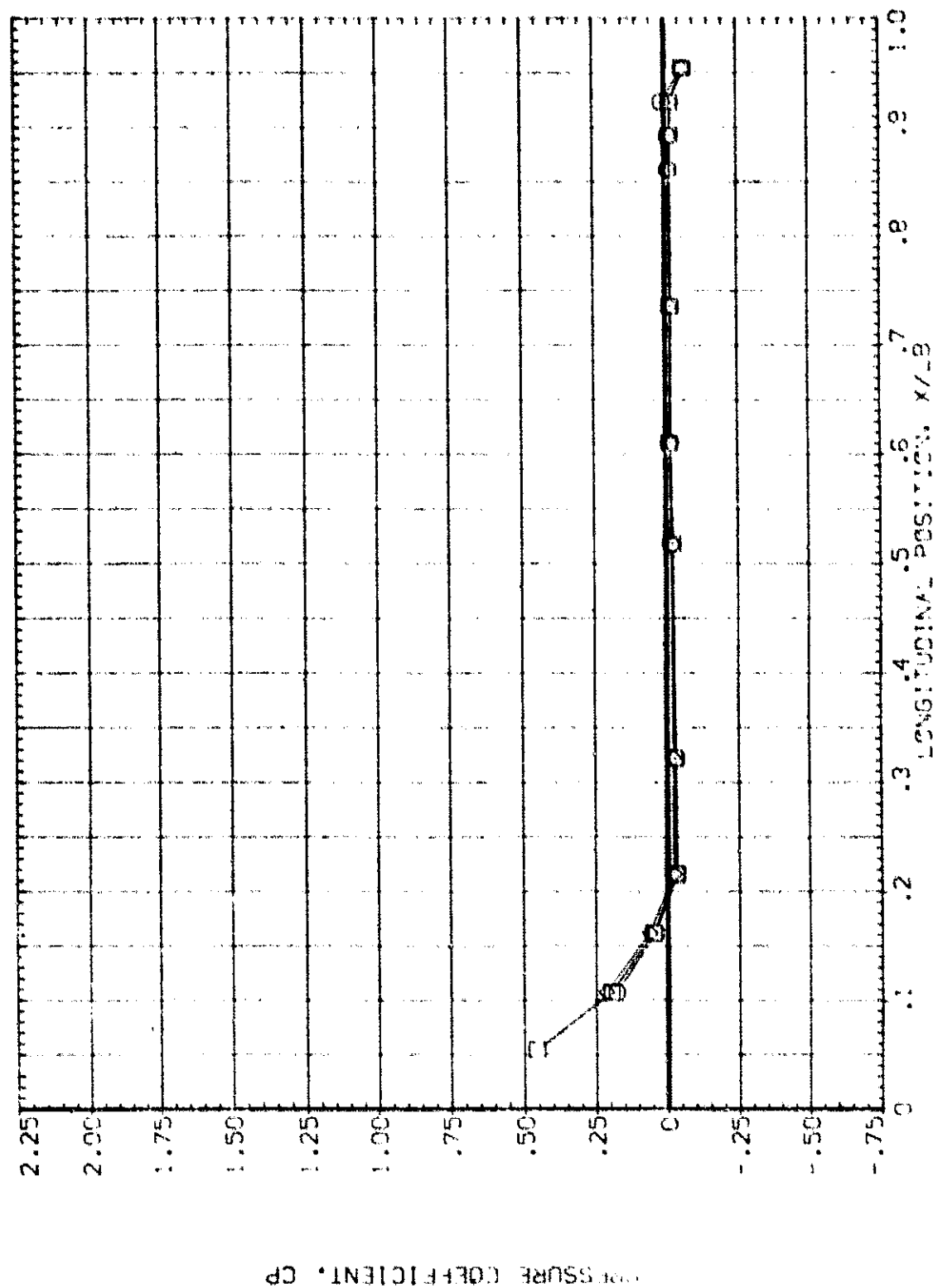


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PERTURBANCES

51.160L  
 180.000  
 232.500  
 225.000

THETA  
 3.770  
 3.480

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 P-1  
 .000  
 90.000

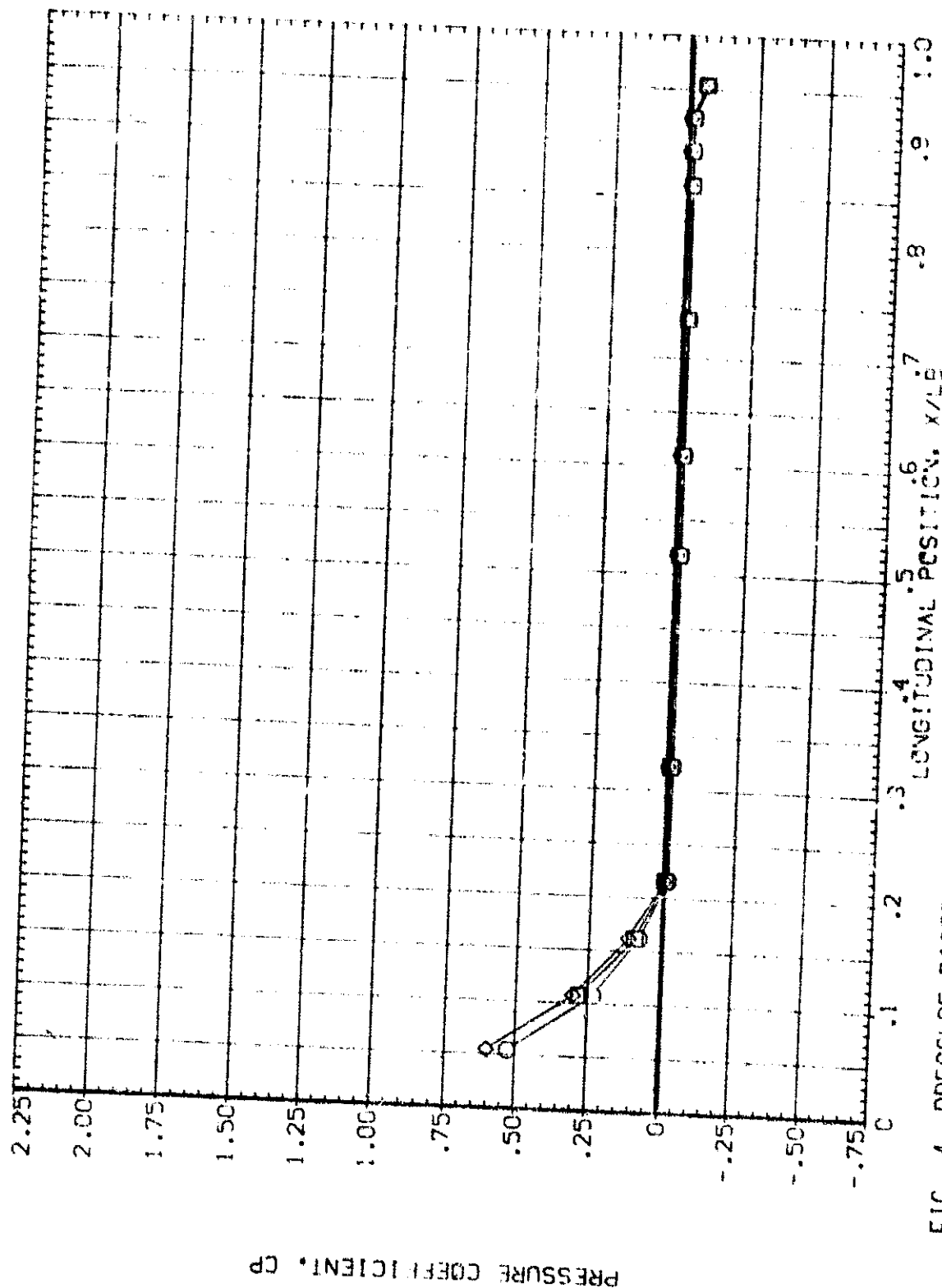


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 [P1A014]

SYMBOL  
 □  
 ◇

THETA  
 247.500  
 270.000  
 292.500

ALPHA  
 3.770

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHASE

.000  
 90.000

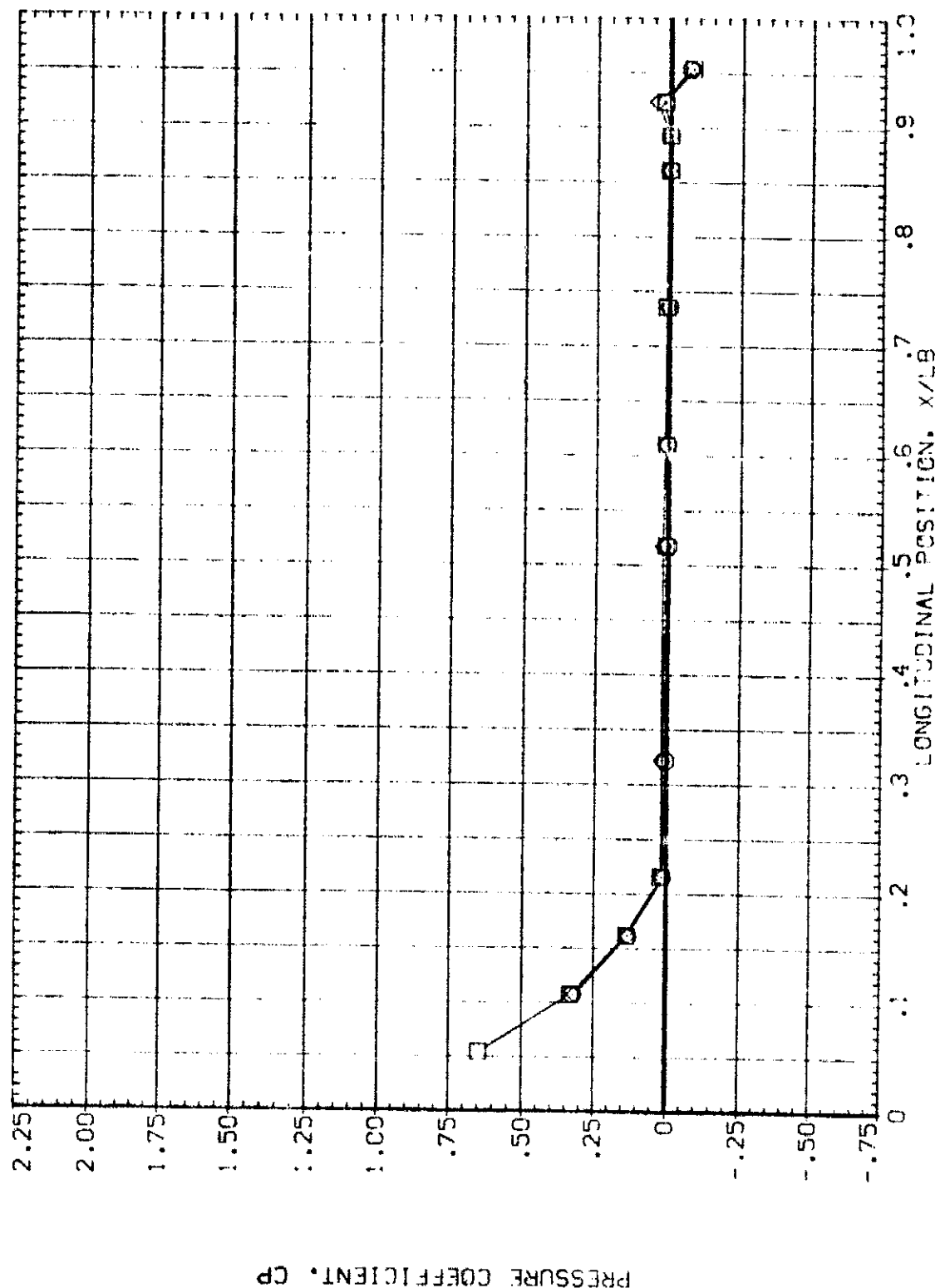


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1

**SYMBOL**

THEY

**ALPHA**

HCX

ИЗДАНИЕ

○

○

○

000'

000'

000'

7,800

3.48

3 480

1937

1937

1937

1937

1937

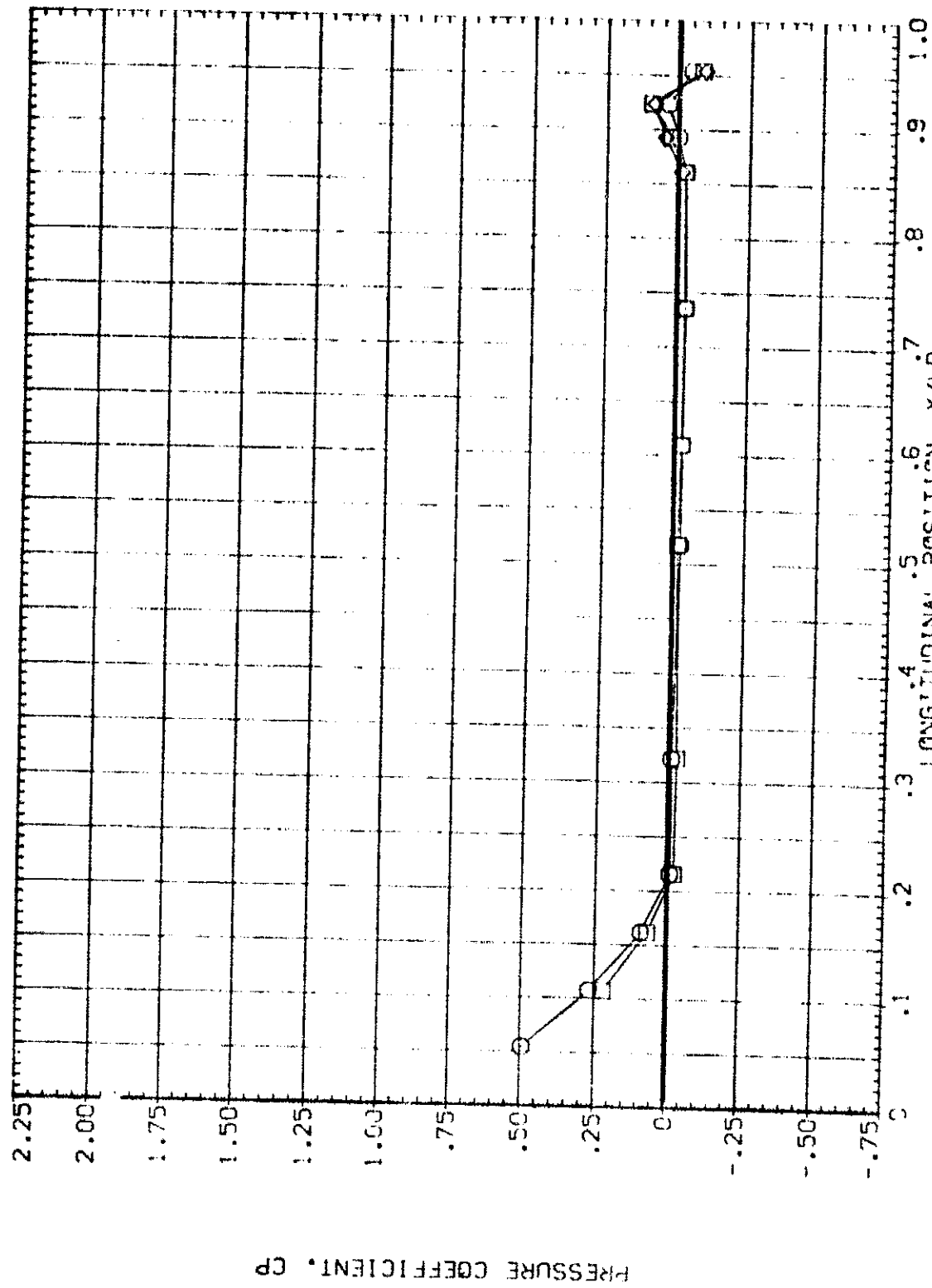


FIG. 4. PRESSURE DISTRIBUTION OVER ET - 11 MODEL WITH PROTUBERANCES



MSFC 595 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA015)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 57.500  
 90.000

ALPHA  
 7.800

MACH  
 3.480

PARAMETRIC VALUES  
 BETA  
 1.000  
 1.000  
 1.000

OFFSET  
 0.000  
 90.000

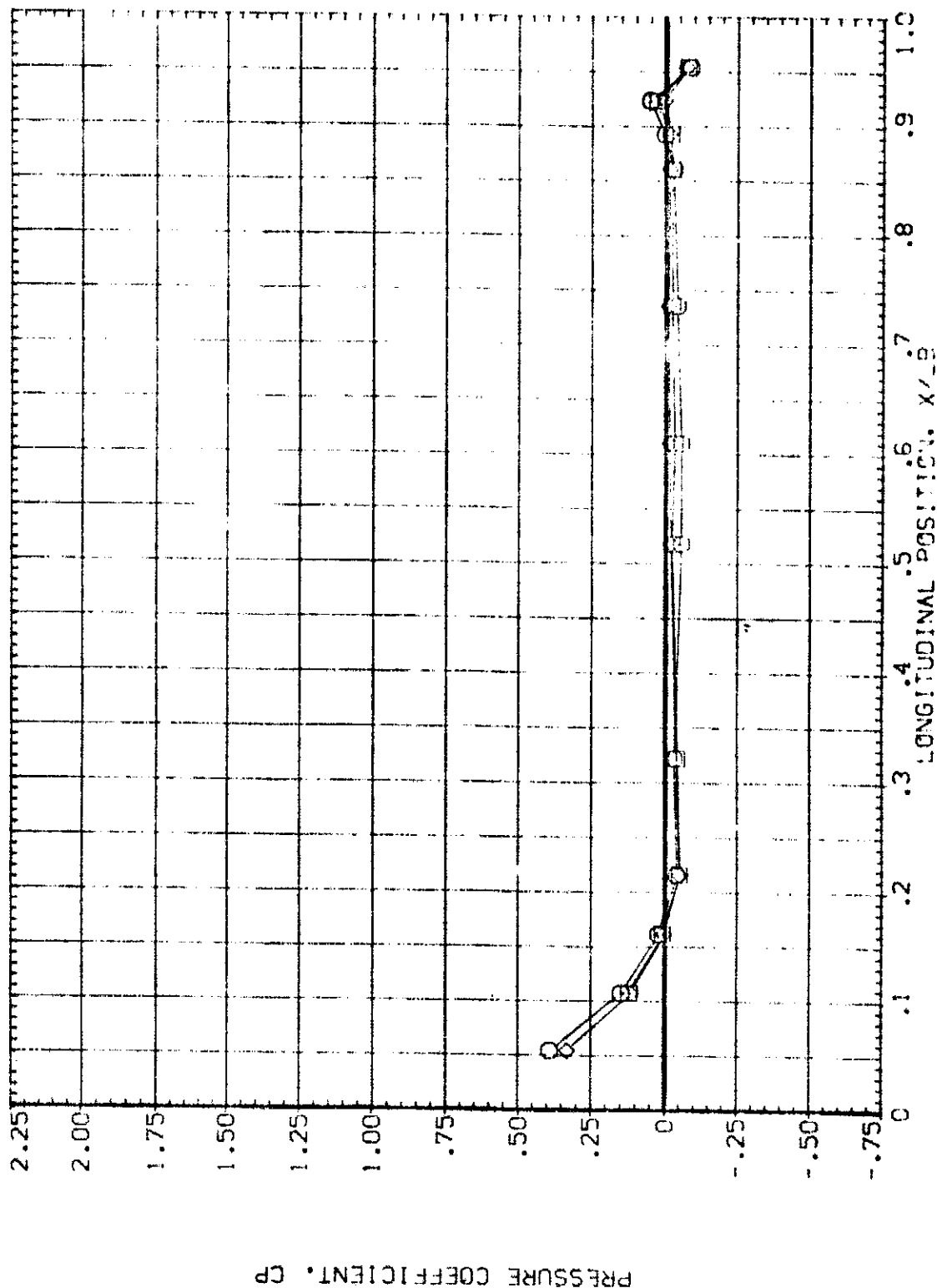


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH P90 TUBERCLES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA015)

SYMBOL

THE TA  
112.500  
135.000  
157.500

ALPHA  
7.800

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

.000  
90.000

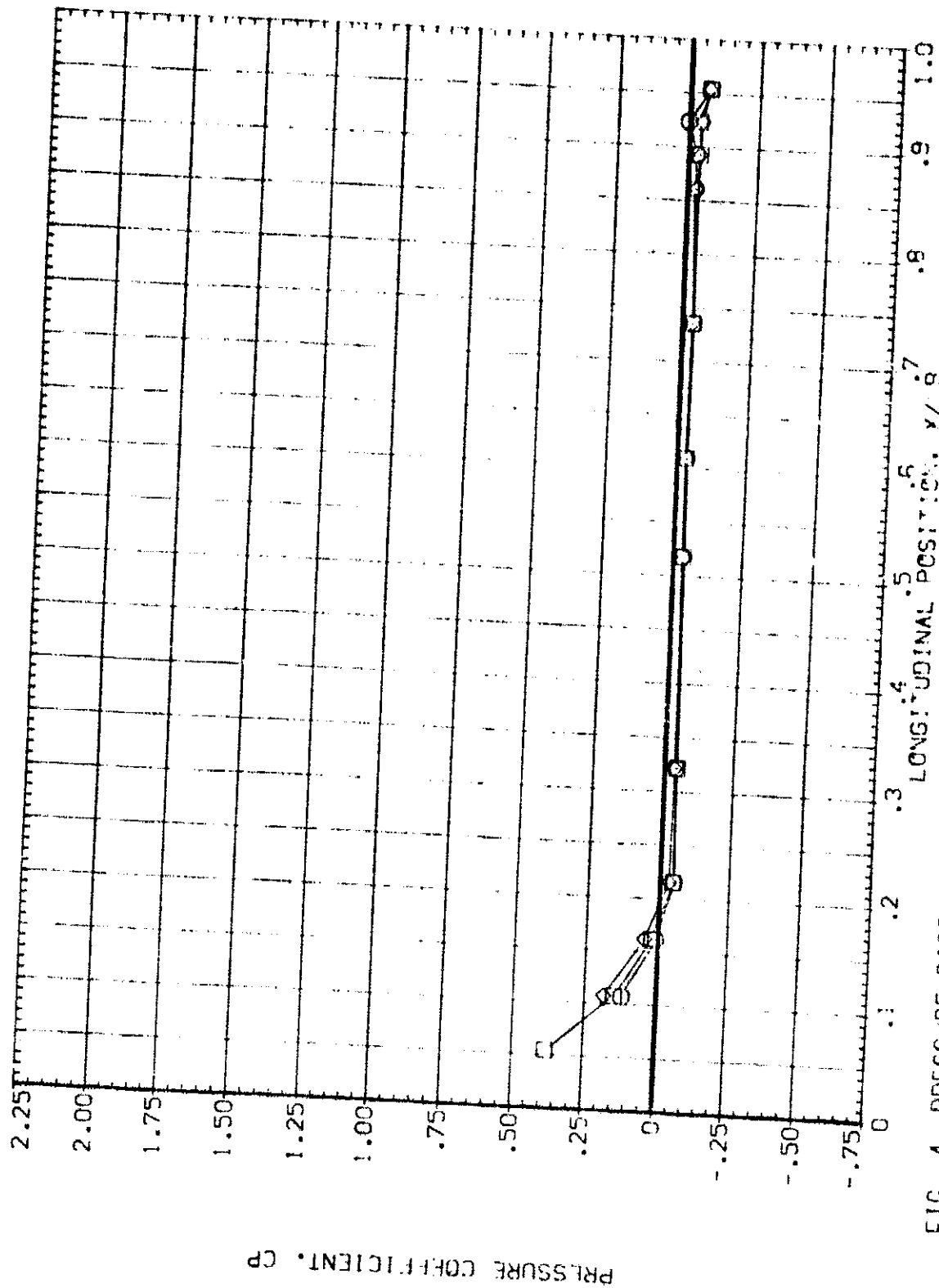


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH SSC DISTURBANCES

SYMBOL THETA ALPHA MACH  
 180.000 7.800 3.480  
 202.500  
 225.000

PARAMETRIC VALUES  
 BETA .000 .01 SET .000  
 MOUNT 1.000 2.00 90.000

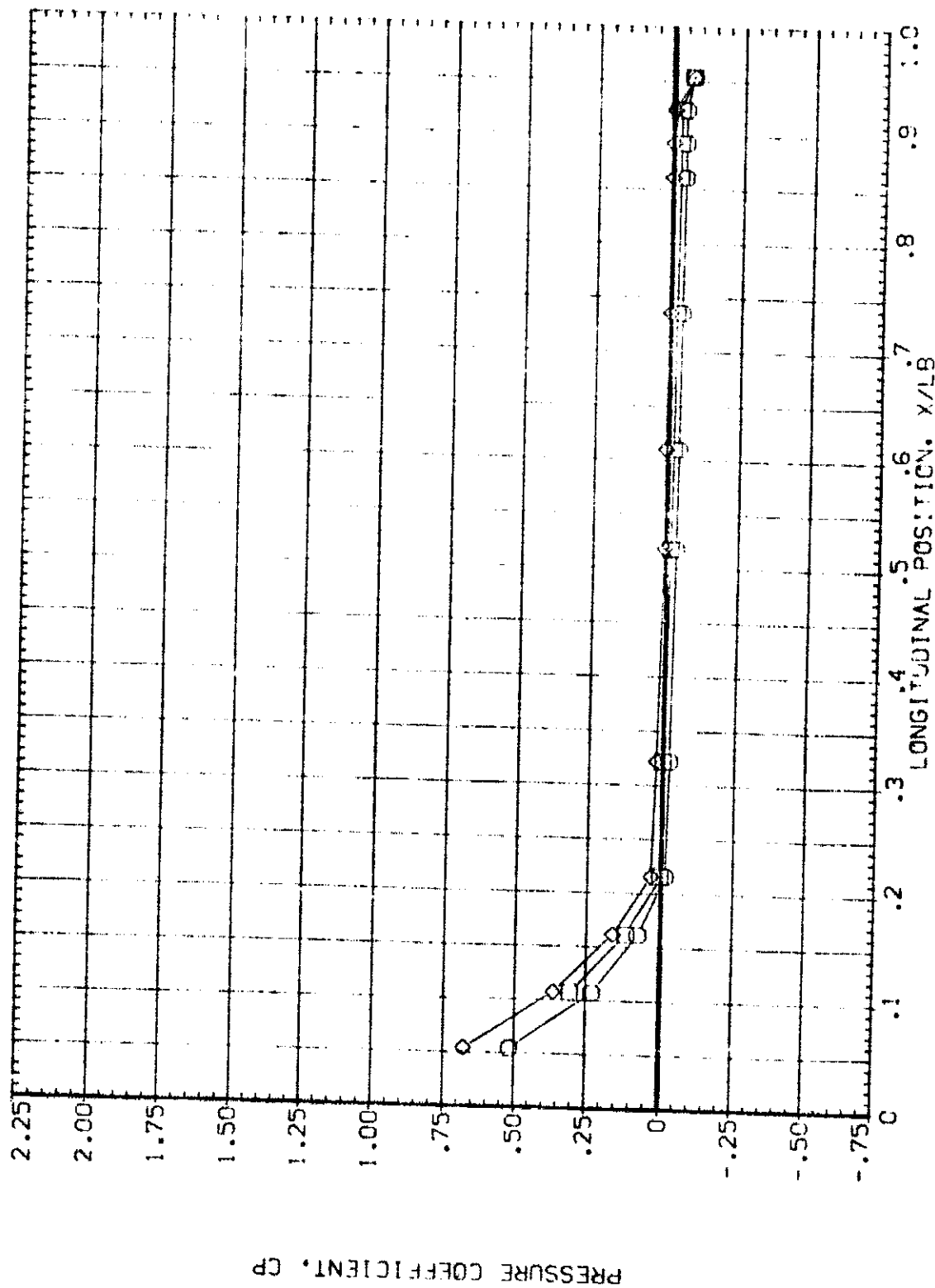


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUDANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	247.500	7.800	3.480	WOUNT	.000 OFFSET
□	270.000				1.000 PH
◇	292.500				90.000

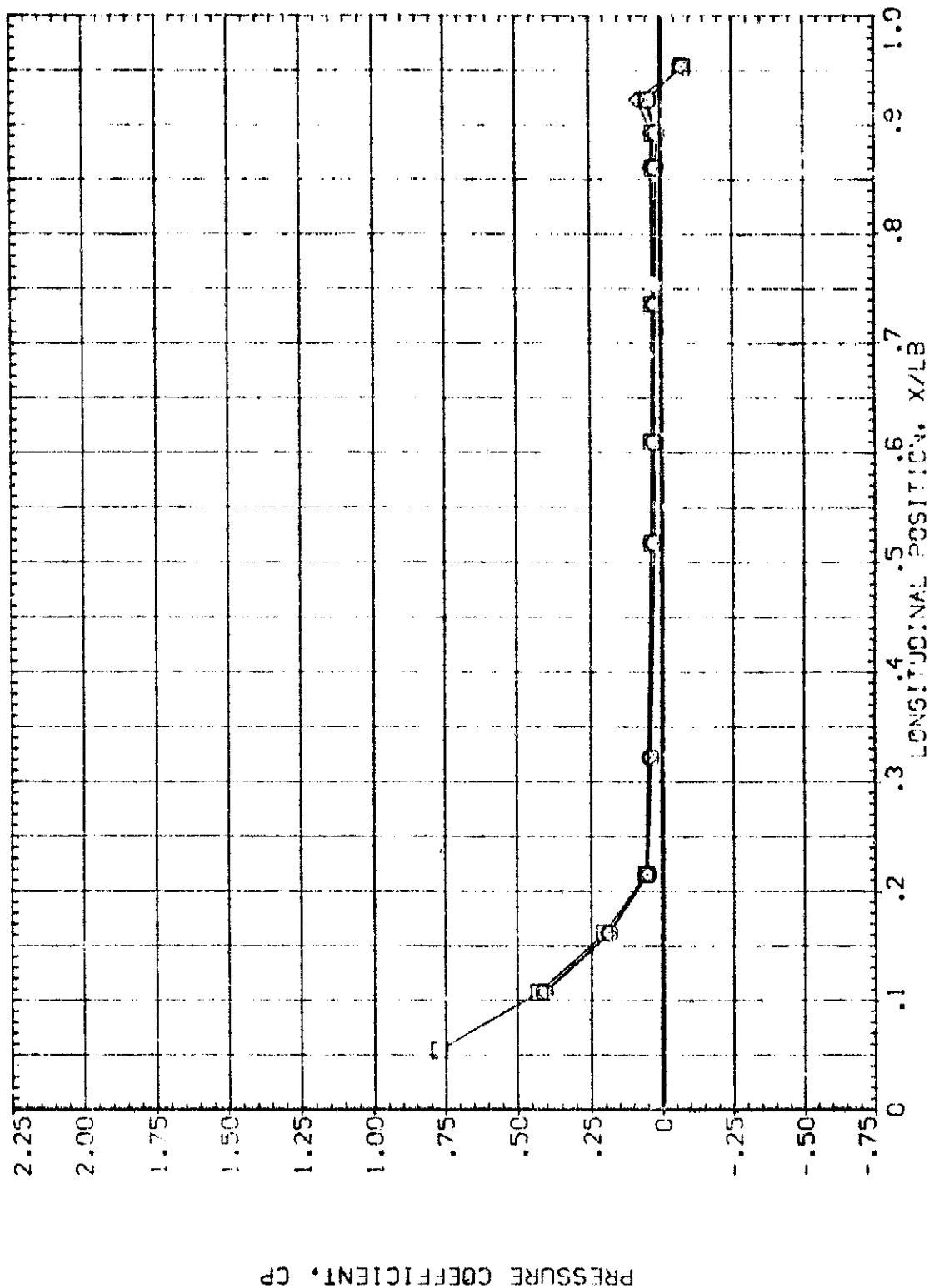


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTOBERANCES

SYMBOL  
 ◇  
 ○  
 □

THETA  
 315.000  
 326.030  
 346.000

ALPHA  
 7.800

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 90.000  
 OFFSET  
 PHI

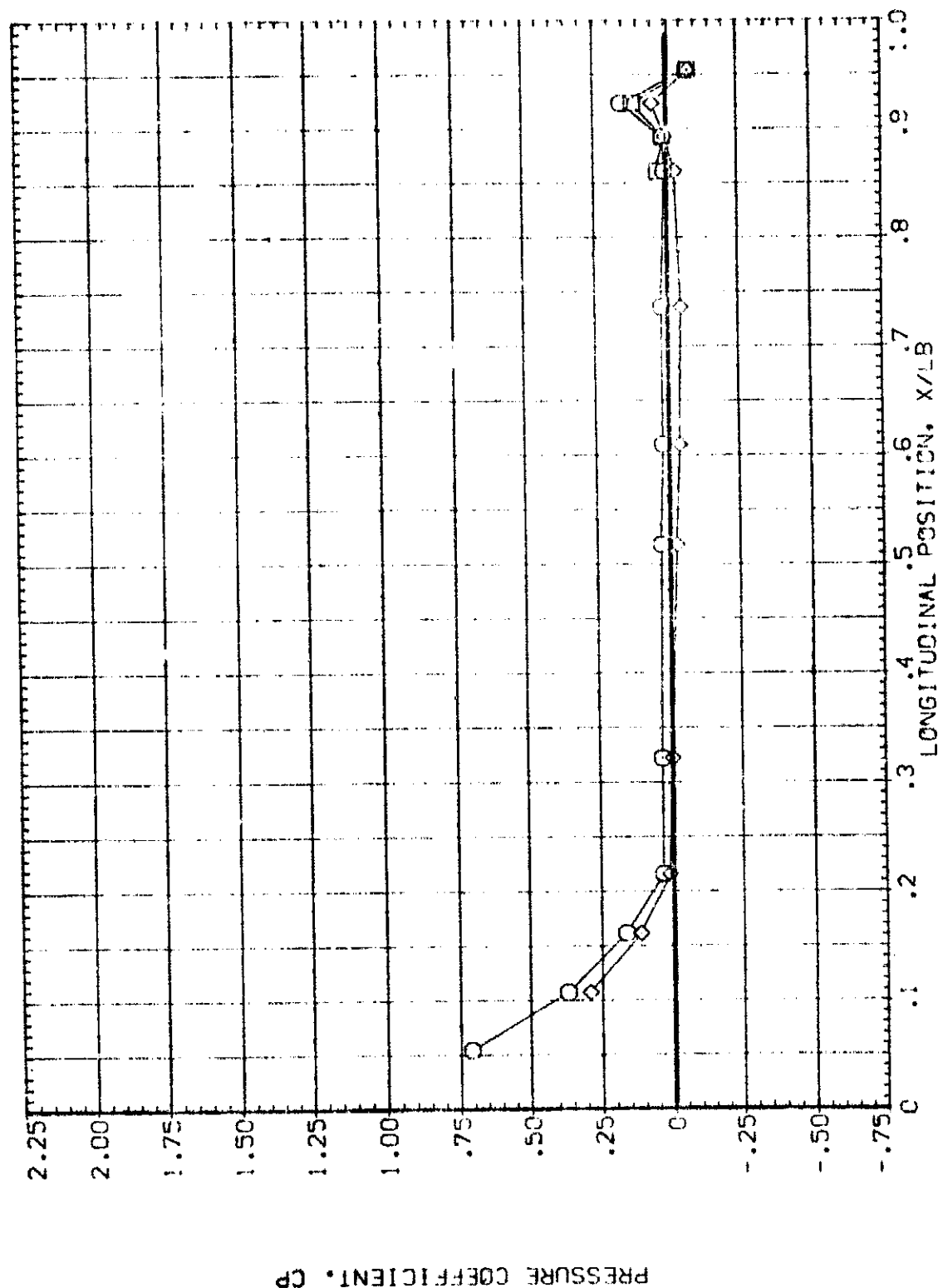


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 595 (1A-2F) MCR0200 EXTERNAL TANK, T1 (PIA016)

SYMBOL  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 12.520  
 3.480

MACH  
 3.480

BETA  
 H0UNT

PARAMETRIC VALUES  
 .000 OFFSET  
 1.000 PH1

20.000  
 90.000

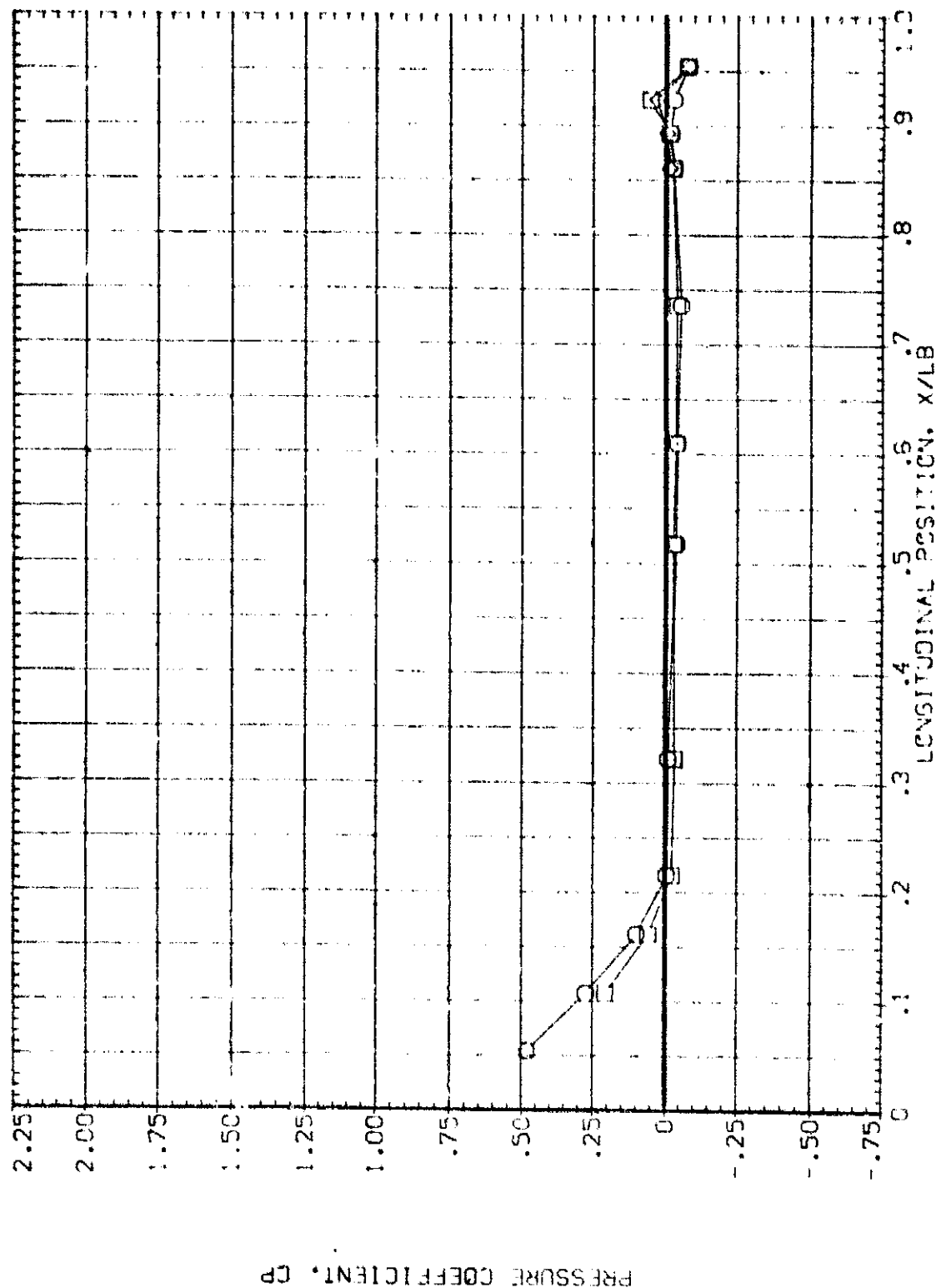


FIG. 4 PRESSURE DISTRIBUTION OVER ET - II MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 BETA .000 0-5 SET 20.000  
 POINT 1.000 PH: 90.000

SYMBOL THETA ALPHA MACH  
 45.000 12.520 3.480  
 57.500  
 90.000

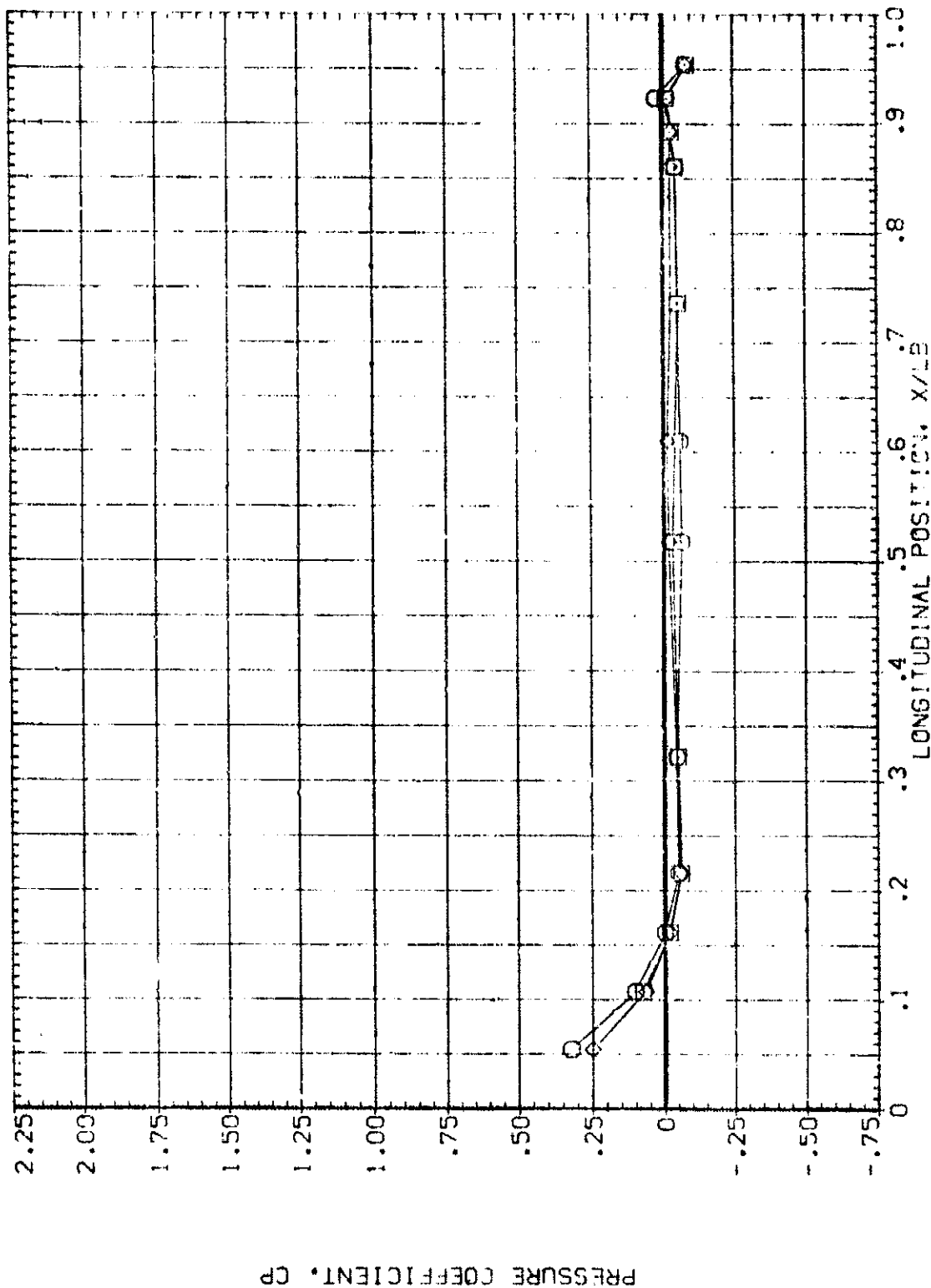


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MUR0200 EXTERNAL TANK, T1 (PIA016)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20.000
□	112.500	12.520	3.490	POINT	PHI	90.000
○	135.000					
◇	157.500					

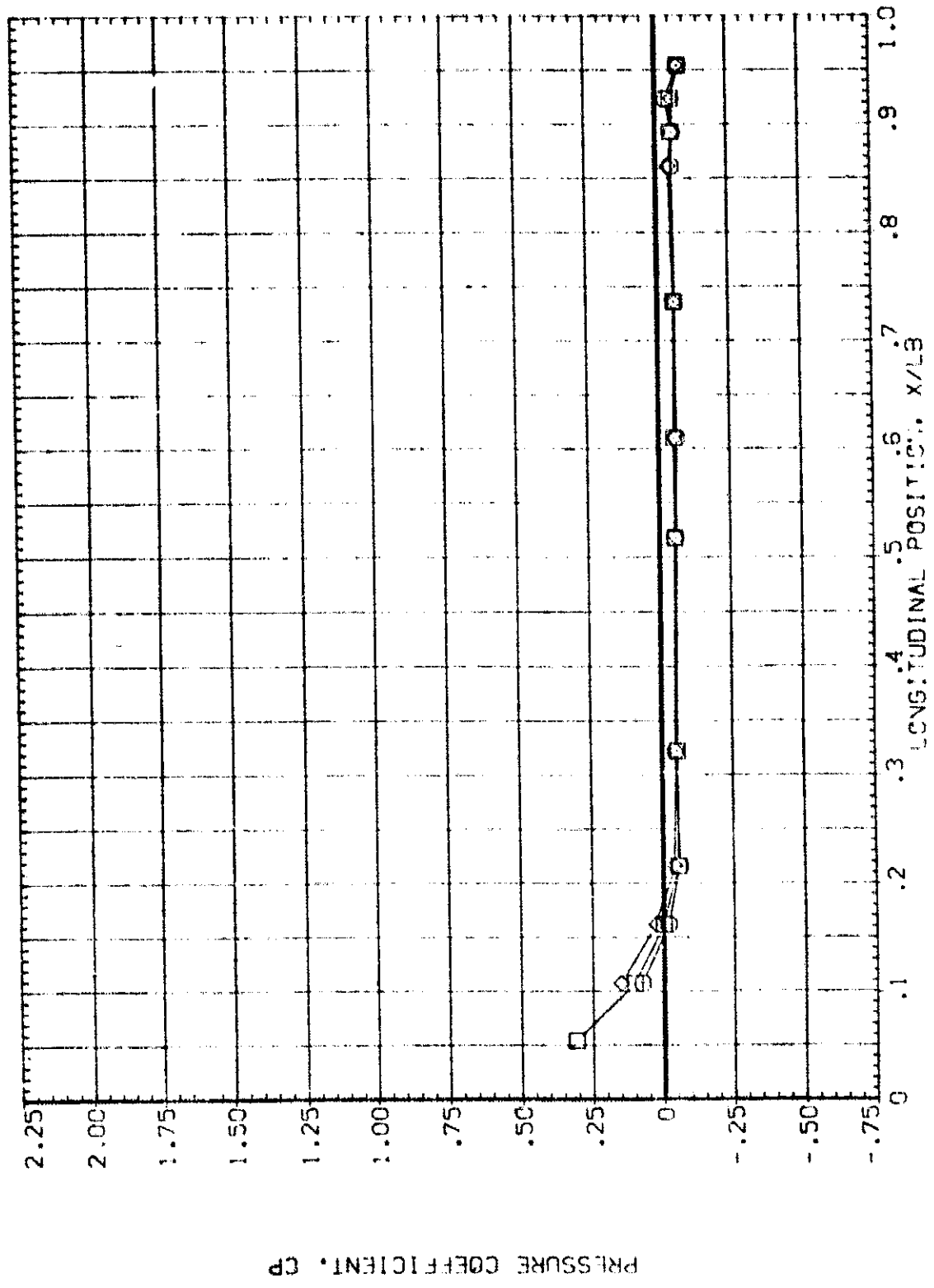


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA016)

SYMBOL  
 ○ □ ◇

THETA ALPHA MACH  
 180.000 12.520 3.180  
 232.500  
 225.000

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI 90.000

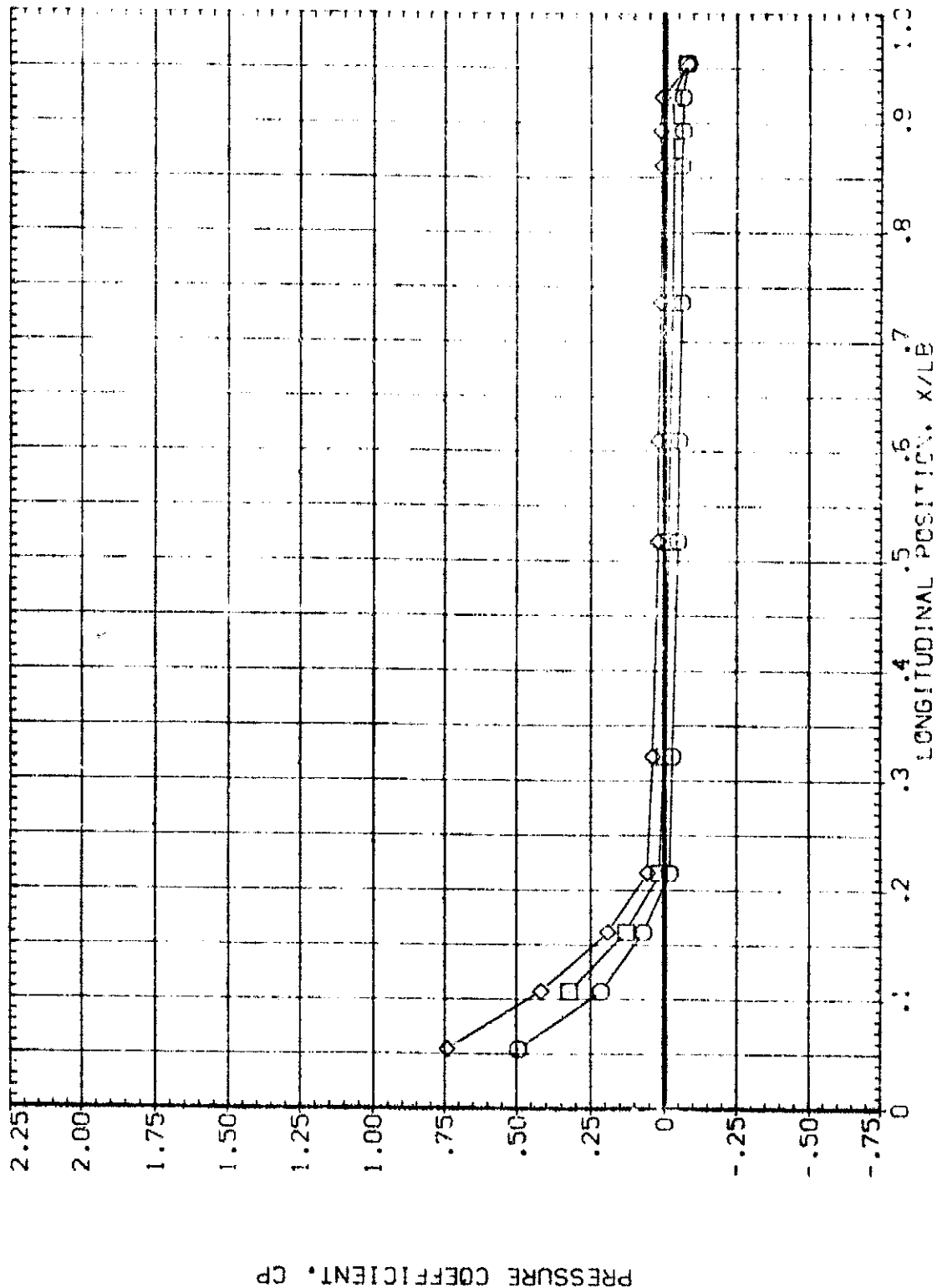


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A016)

SYMBOL    THETA    ALPHA    MACH  
 ○    247.500    12.520    3.480  
 □    270.000  
 ◇    292.500

PARAMETRIC VALUES  
 BETA    .000    OFFSET    20.000  
 MOUNT    1.000    PHI    90.000

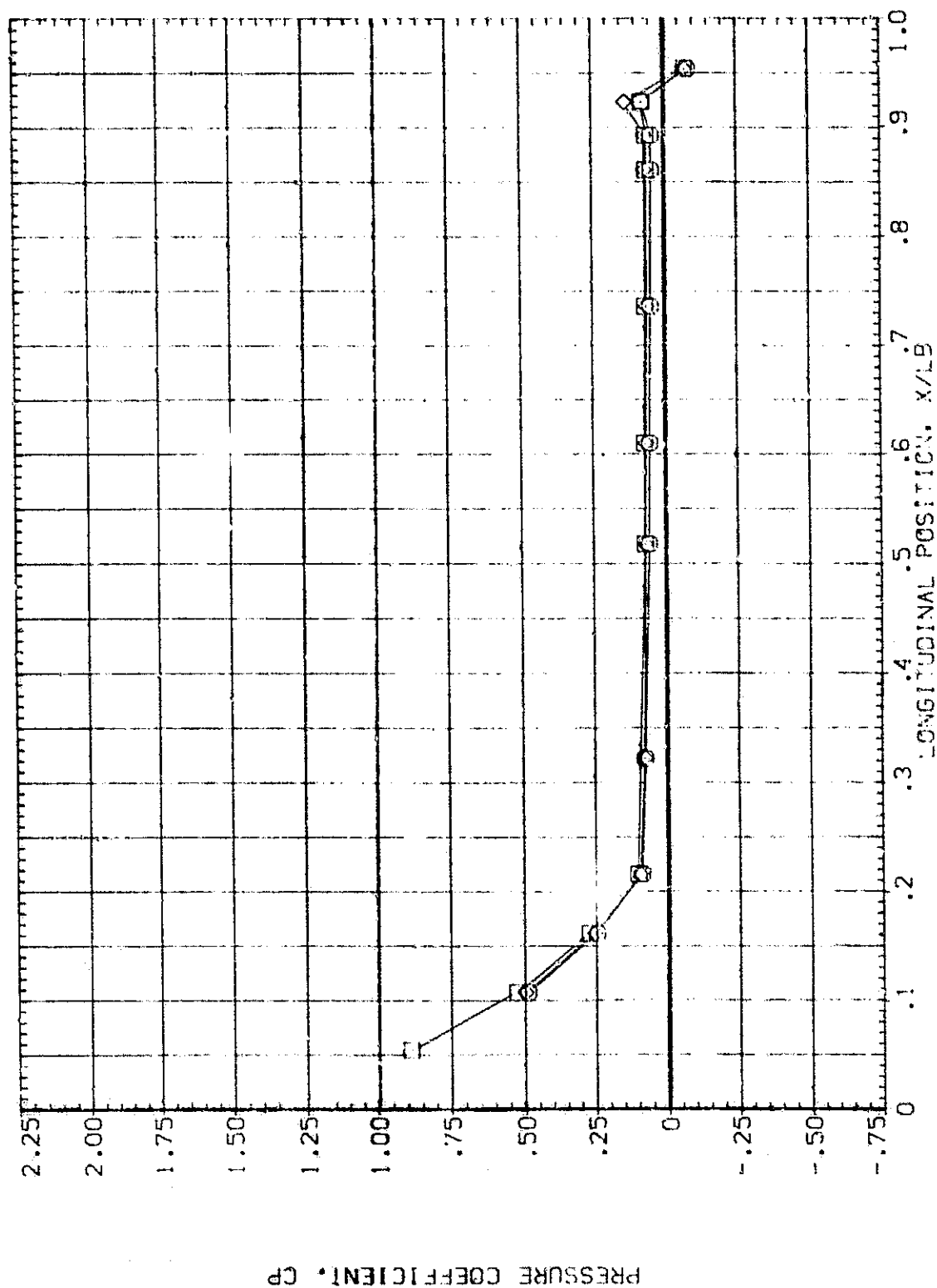


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
315.000  
326.000  
346.000

THETA  
315.000  
326.000  
346.000

ALPHA  
12.520  
12.520  
12.520

MACH  
3.480  
3.480  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
C... 20.000  
D... 90.000

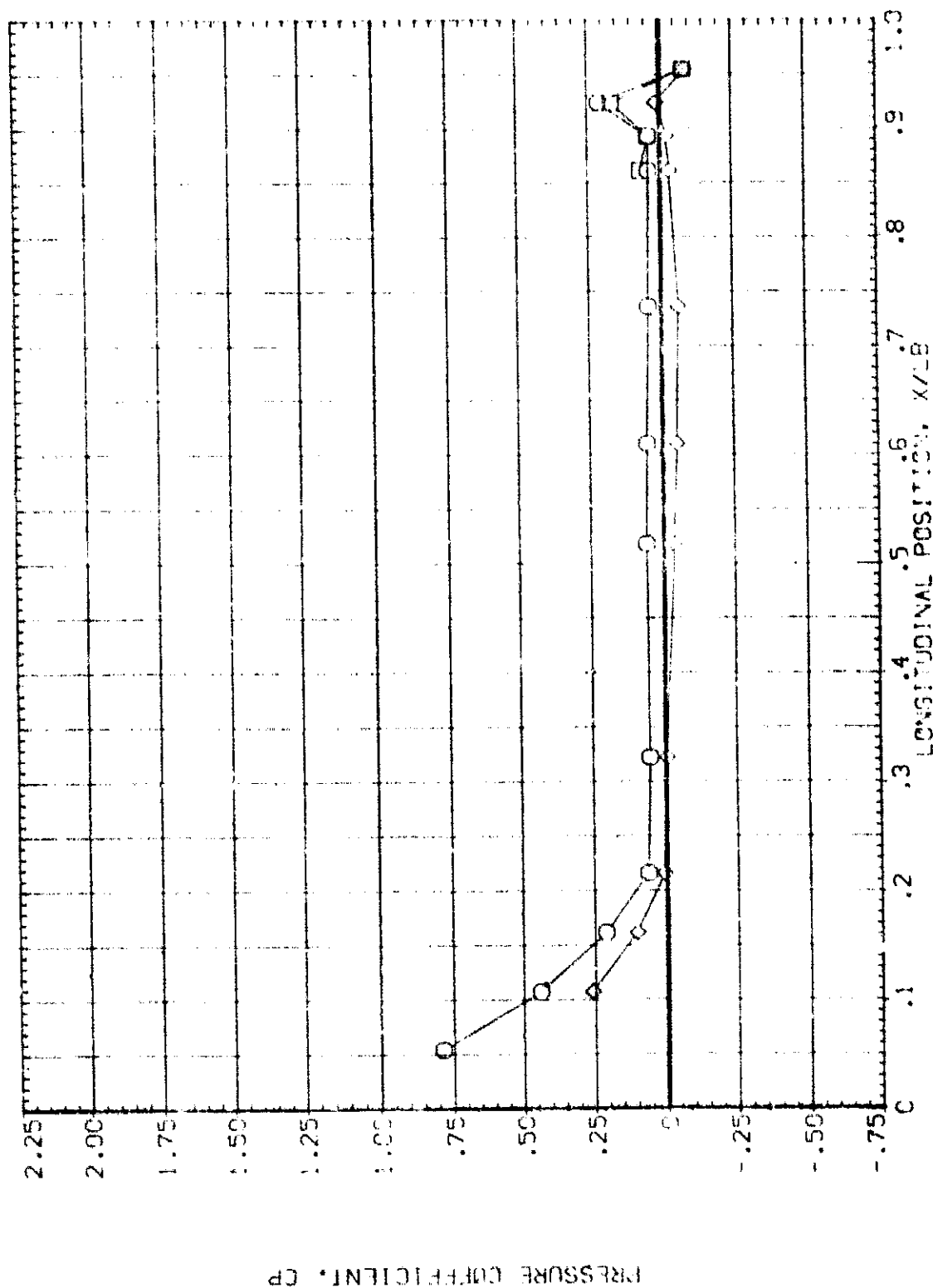


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH SURFACES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA017)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 16.560

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI

20.000  
 90.000

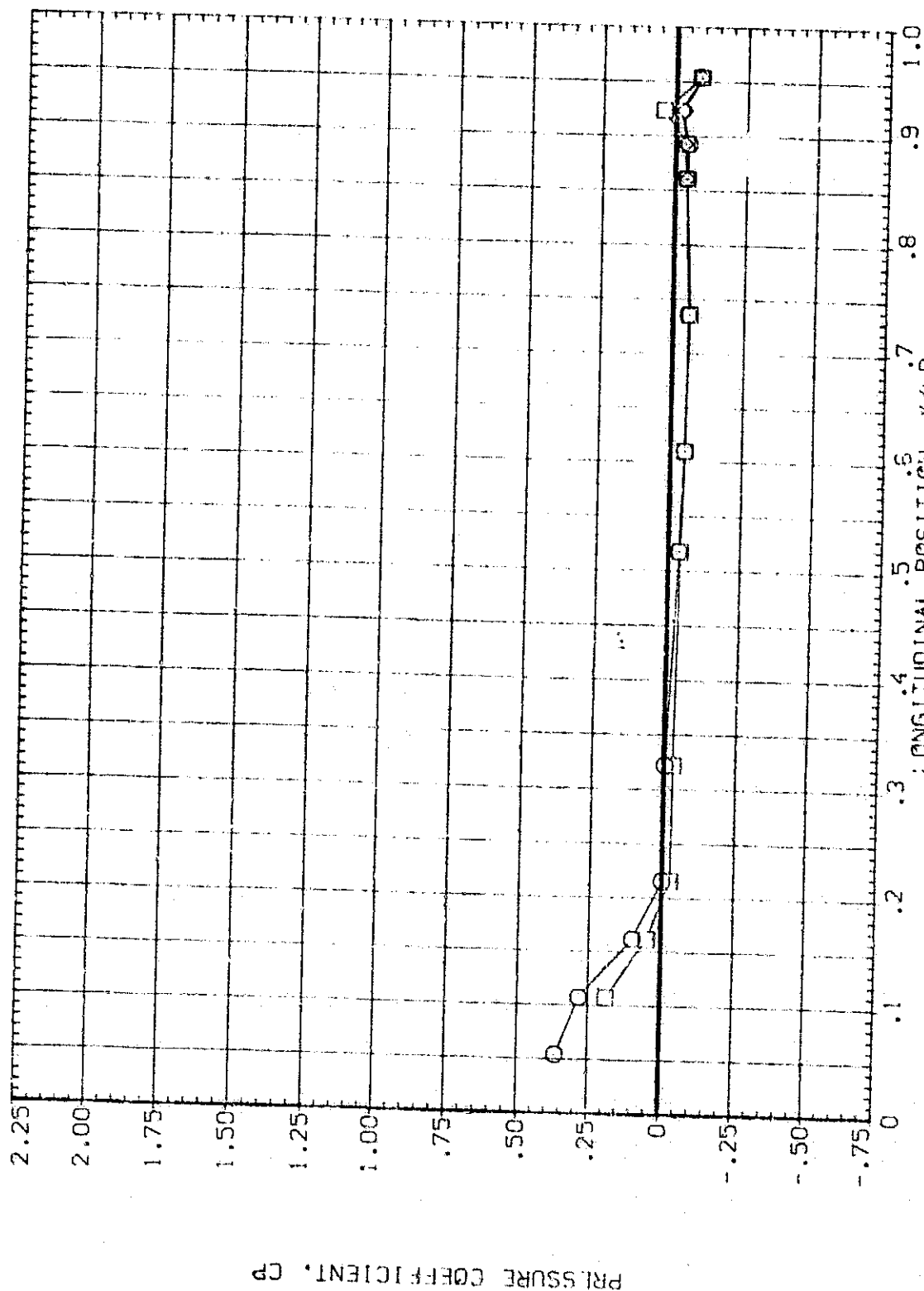


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 □  
 ◇

THETA  
 45.000  
 57.500  
 90.000

ALPHA  
 16.560  
 3.480

MACH  
 3.480

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 .000

BETA  
 MOUNT

OFFSET  
 PH

20.000  
 90.000

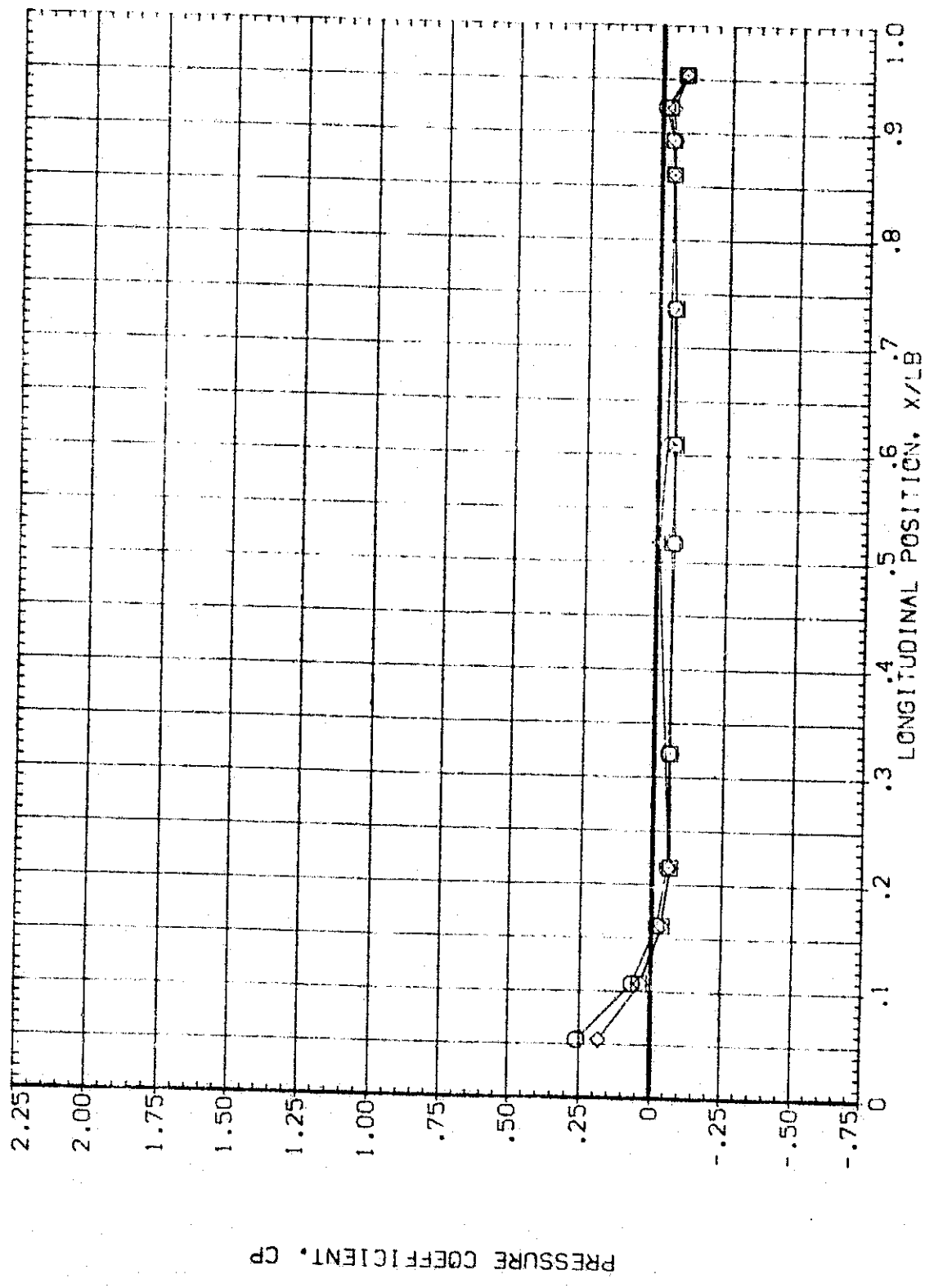


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, TI

**JOHNS**

THE TA

**ALPHA**

**H344**

HJW:ms

12.500

**\$00**

12.500

PARAMETRIC VALUES

BY A

BY A

0001

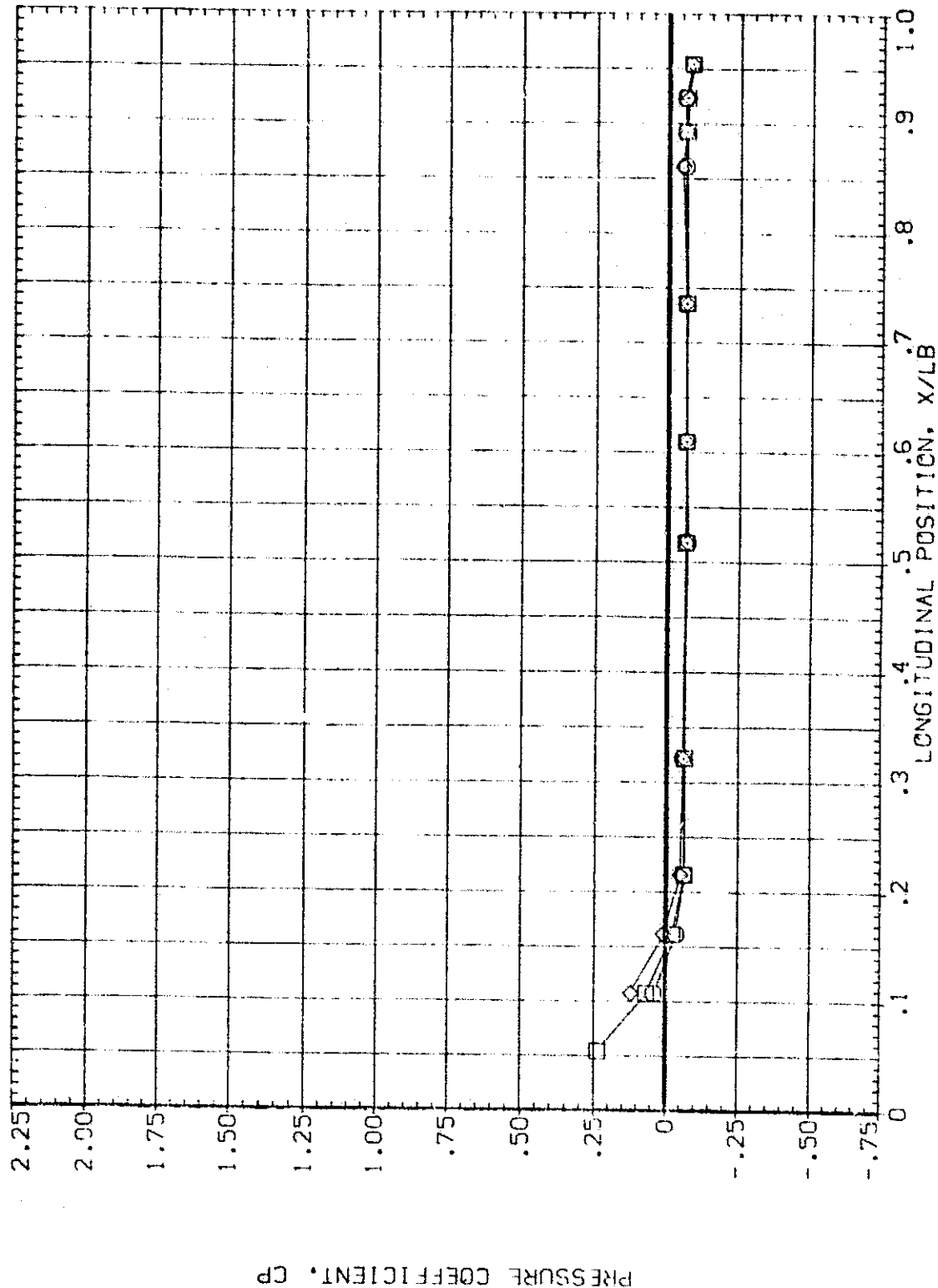
0001

5330

5330

20.000

20.000



LONGITUDINAL POSITION, X/LB

FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA017)

SYMBOL

180.000  
202.500  
225.000

ALPHA 16.560  
MACH 3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.300  
1.000  
OFFSET  
P-1  
20.000  
90.000

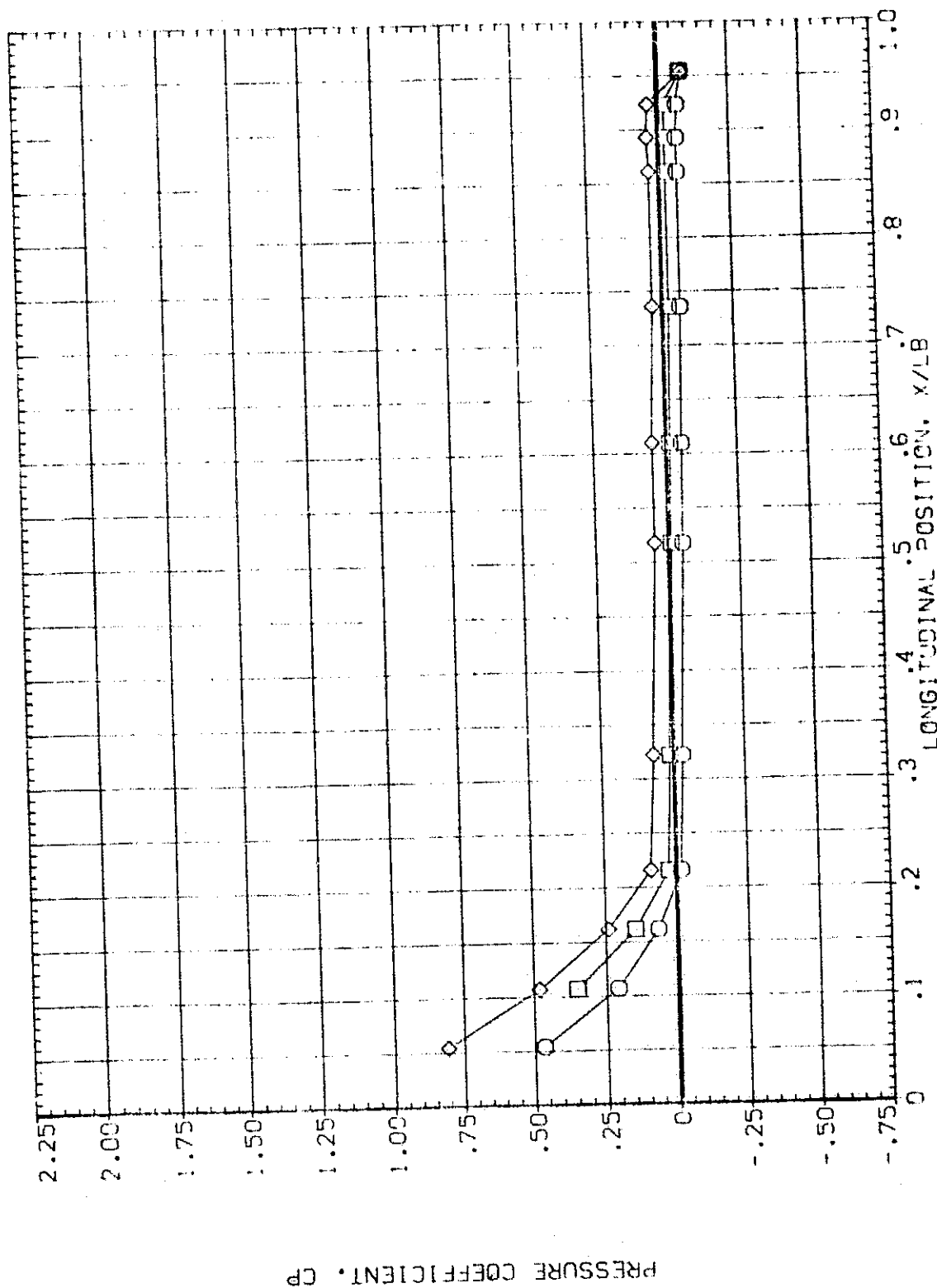


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA017)

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES	
					.000	OFFSET
○	247.500	16.560	3.480	PHI	1.000	PHI
□	270.000					
◇	292.500					

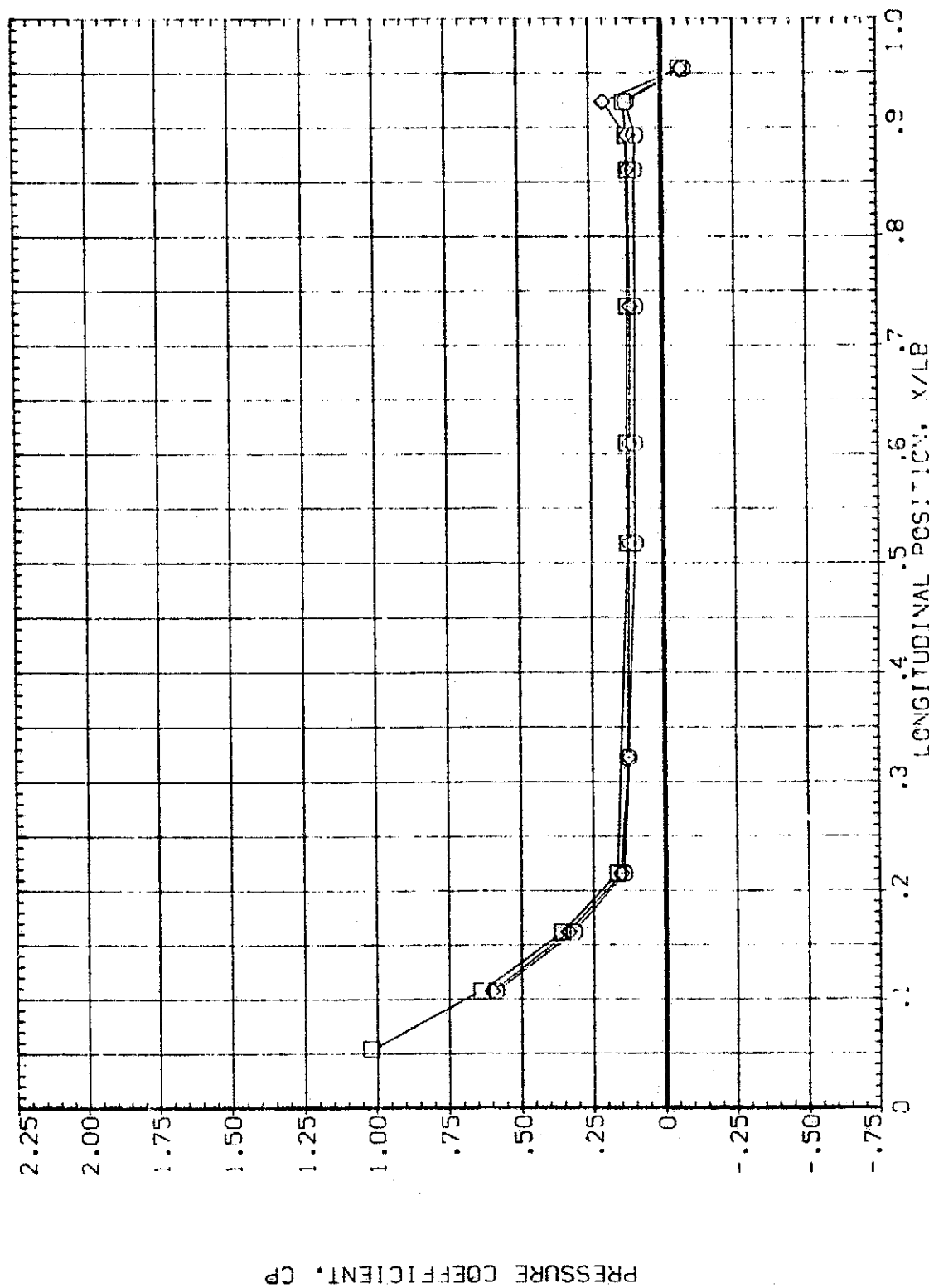


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL  
 O  
 □  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 16.560

MACH  
 3.480

RETA  
 1.000

PARAMETRIC VALUES  
 .000  
 1.000  
 20.000  
 90.000

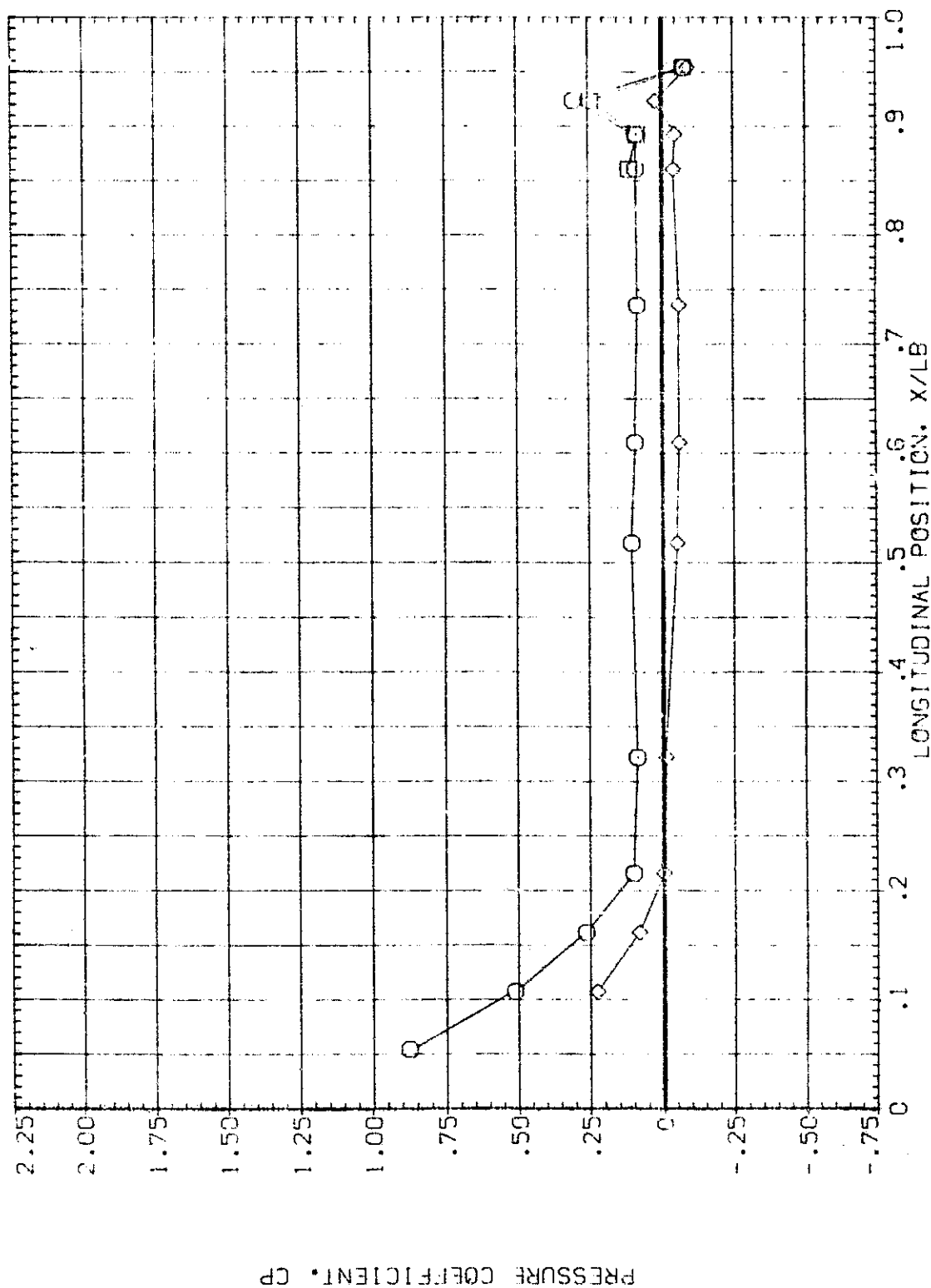


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA018)

PARAMETRIC VALUES  
 .000 .000 20.000  
 1.000 1.000 90.000  
 BETA  
 MOUNT

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 20.610

MACH  
 3.480

SYMBOL  
 □  
 ◇

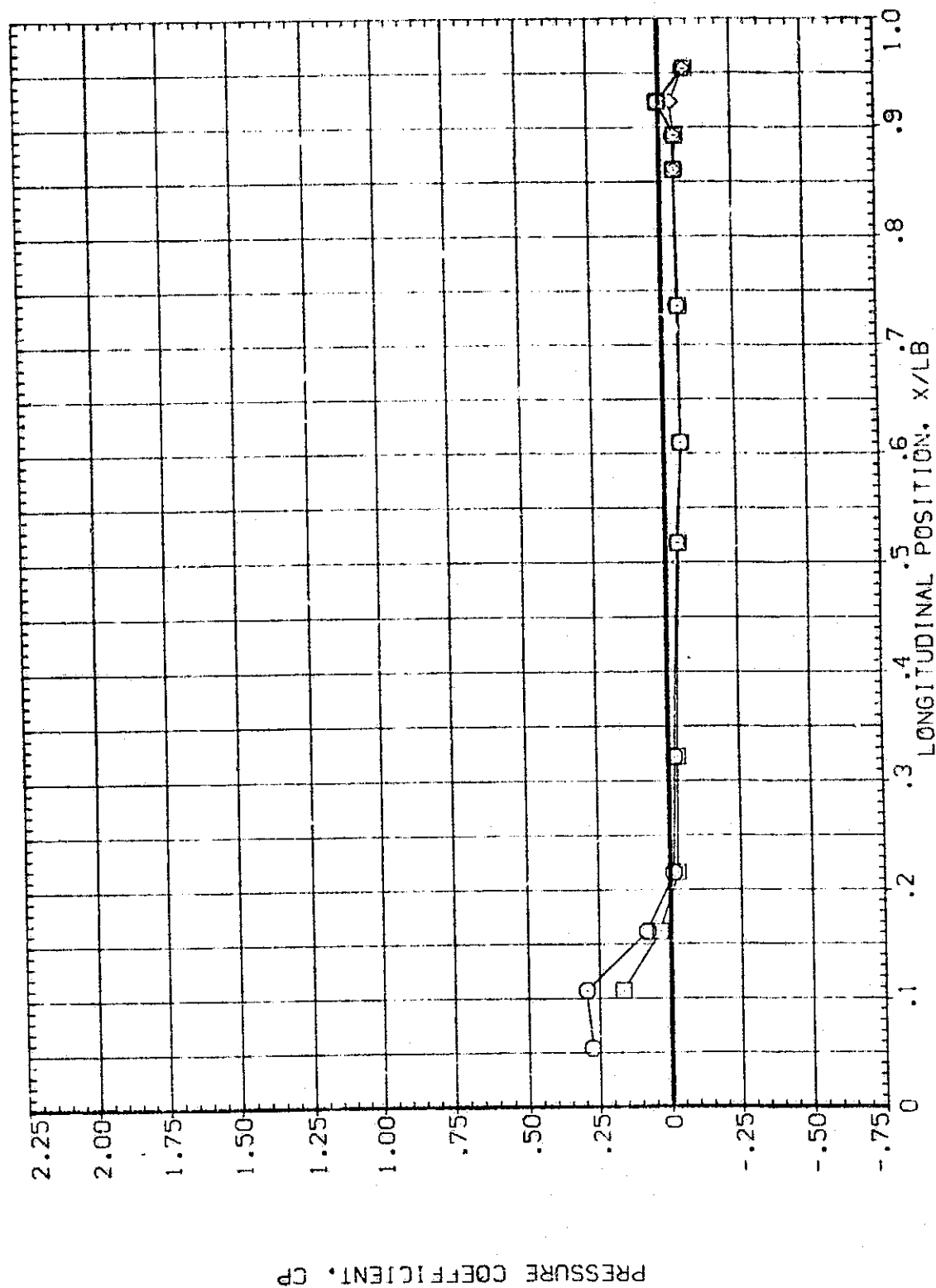


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA018)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES		
	45.000	67.500	20.610	20.610	3.480	3.480	BETA	OFFSET	20.000
○	67.500						1.000	PH	90.000
◇	90.000								

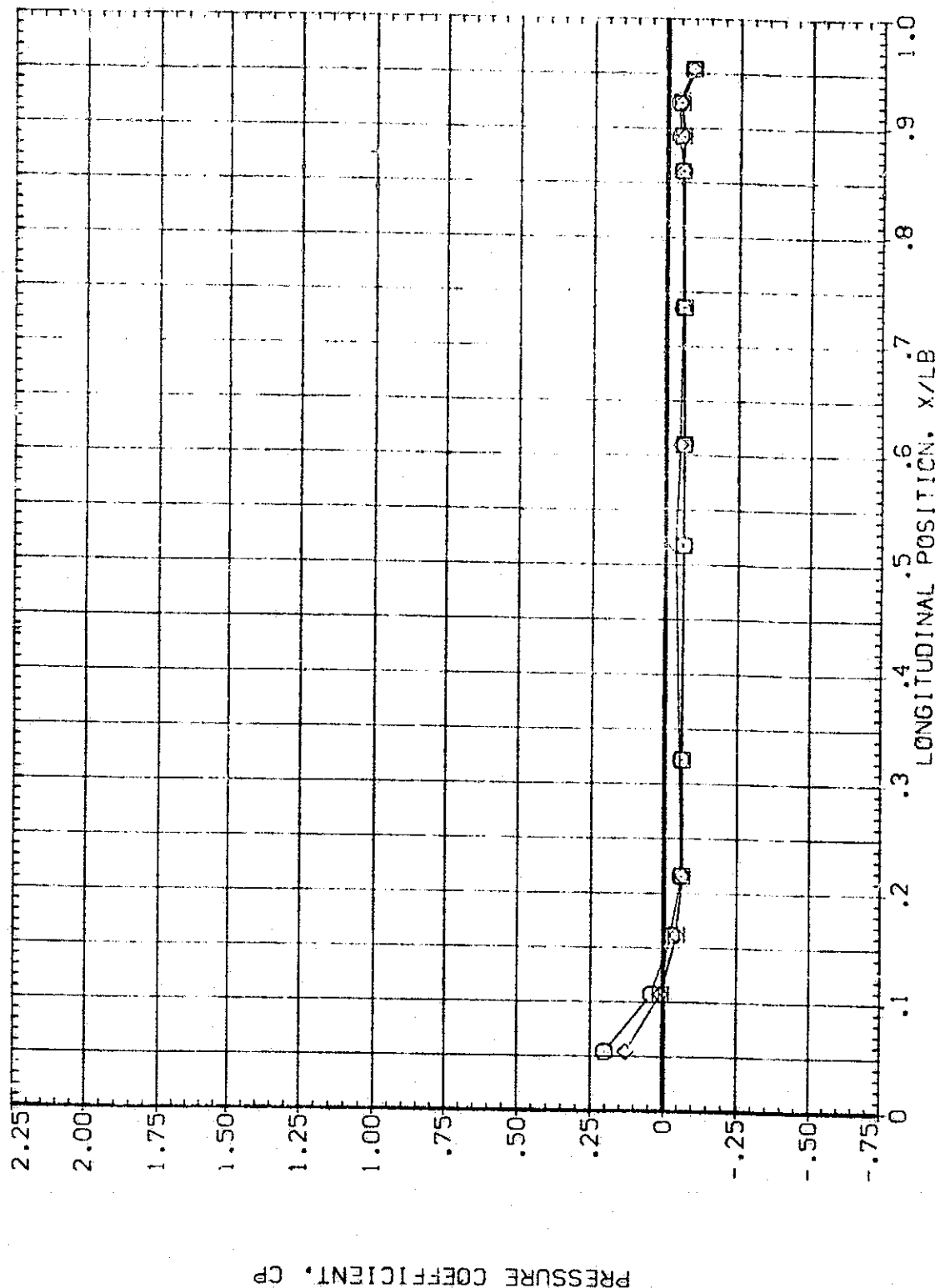


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA018)

SYMBOL  
 112.500  
 135.000  
 157.500

THETA  
 ALPHA  
 20.610  
 MACH  
 3.480

BETA  
 MOUNT  
 1.000  
 20.000  
 90.000  
 PH1

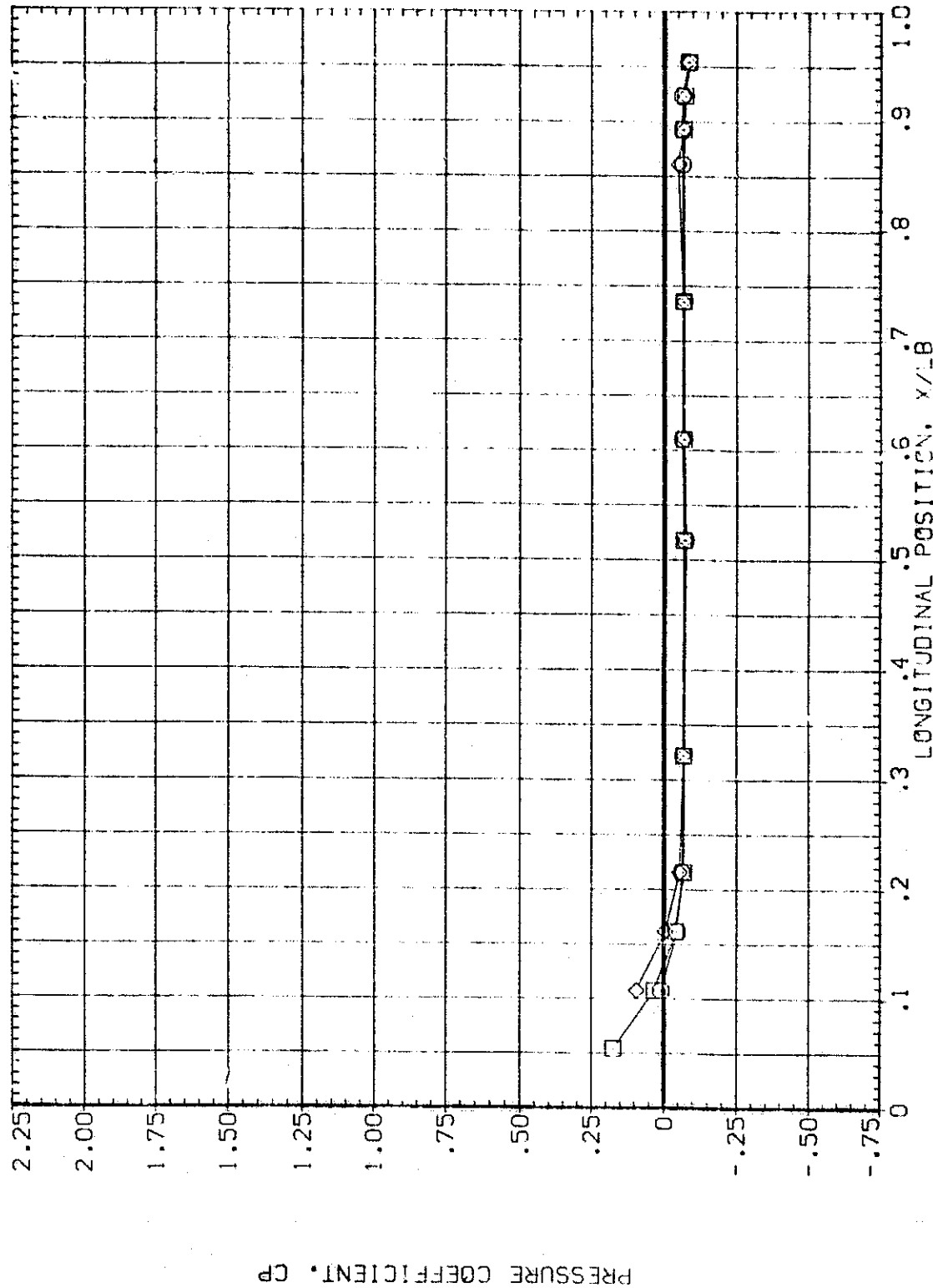


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A018)

SYMBOL

THETA  
180.000  
222.500  
225.000

ALPHA  
20.610

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
20.000  
90.000  
PHI

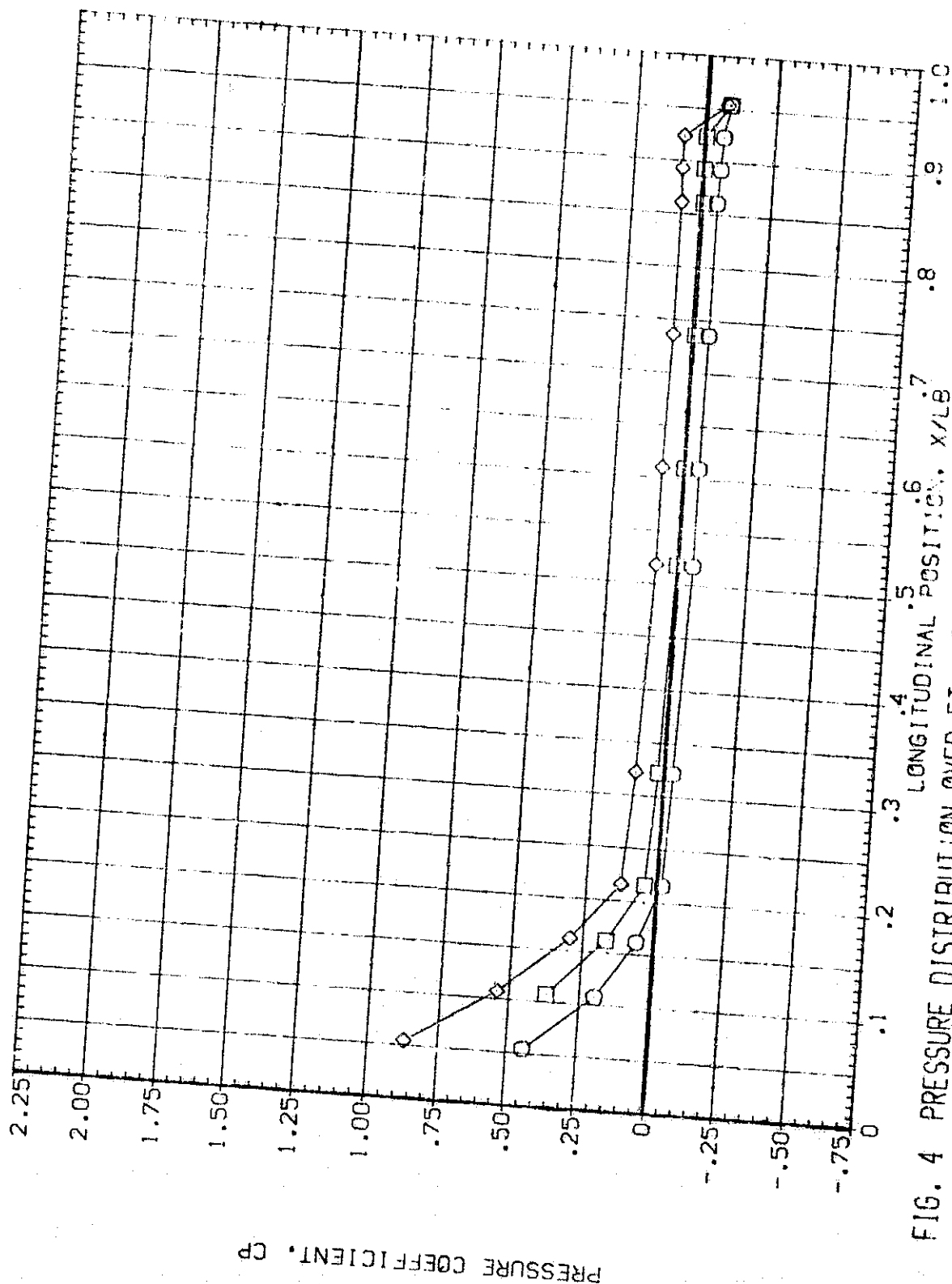


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA018)

SYMBOL  
 □ 247.500  
 □ 270.000  
 ◇ 292.500

THETA  
 ALPHA 20.610  
 MACH 3.480

BETA  
 MOUNT 1.000  
 PH1 .000  
 OFFSET 20.000  
 PH1 90.000

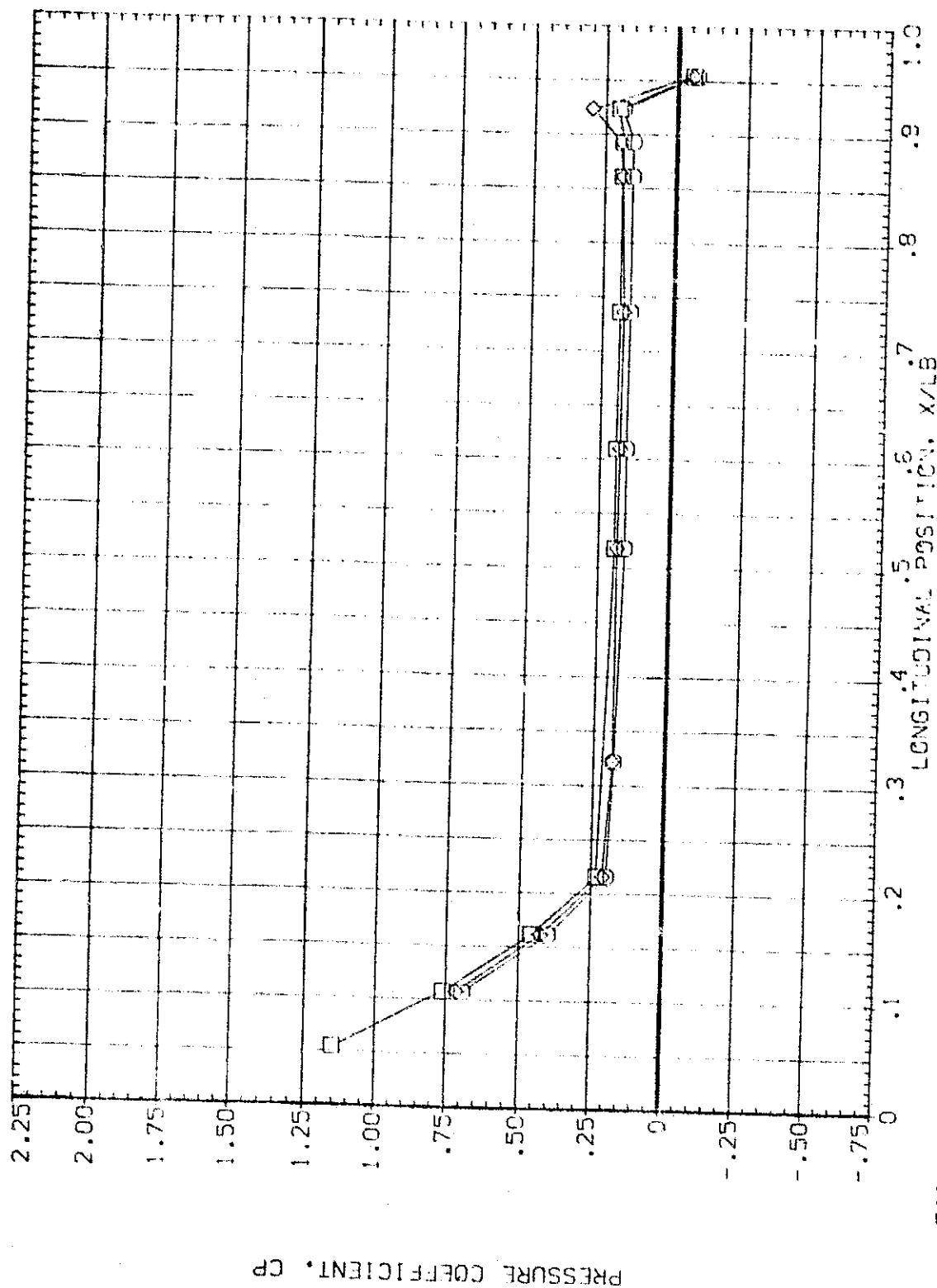


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 .000 OFFSE7 20.000  
 1.000 PHI 90.000

BETA  
 MOUNT

ALPHA  
 20.610

THETA  
 315.000

MACH  
 3.480

326.000  
 346.000

SYMBOL  
 O  
 □  
 ◇

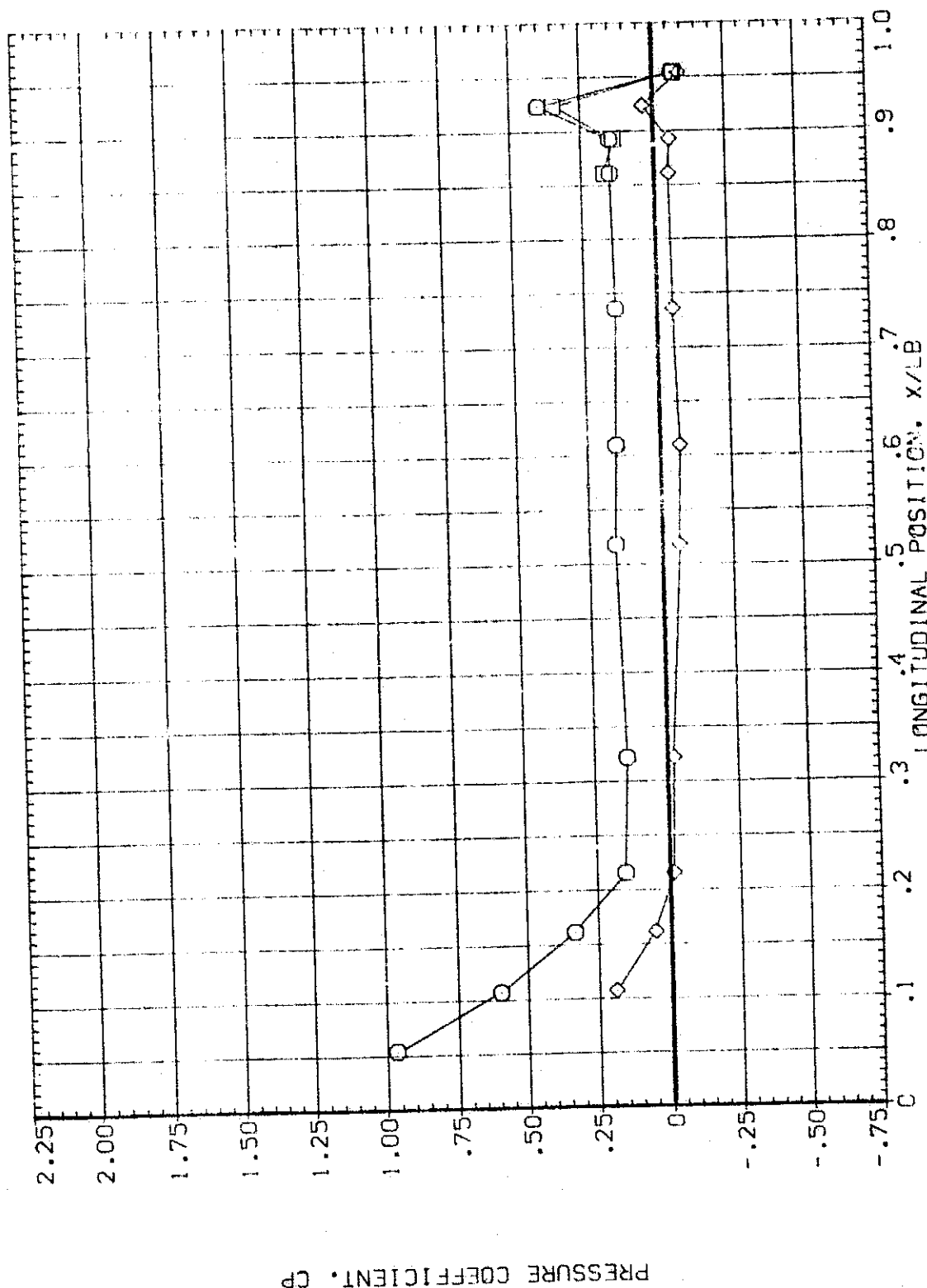


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A019)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 24.660

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 PH1  
 20.000  
 90.000

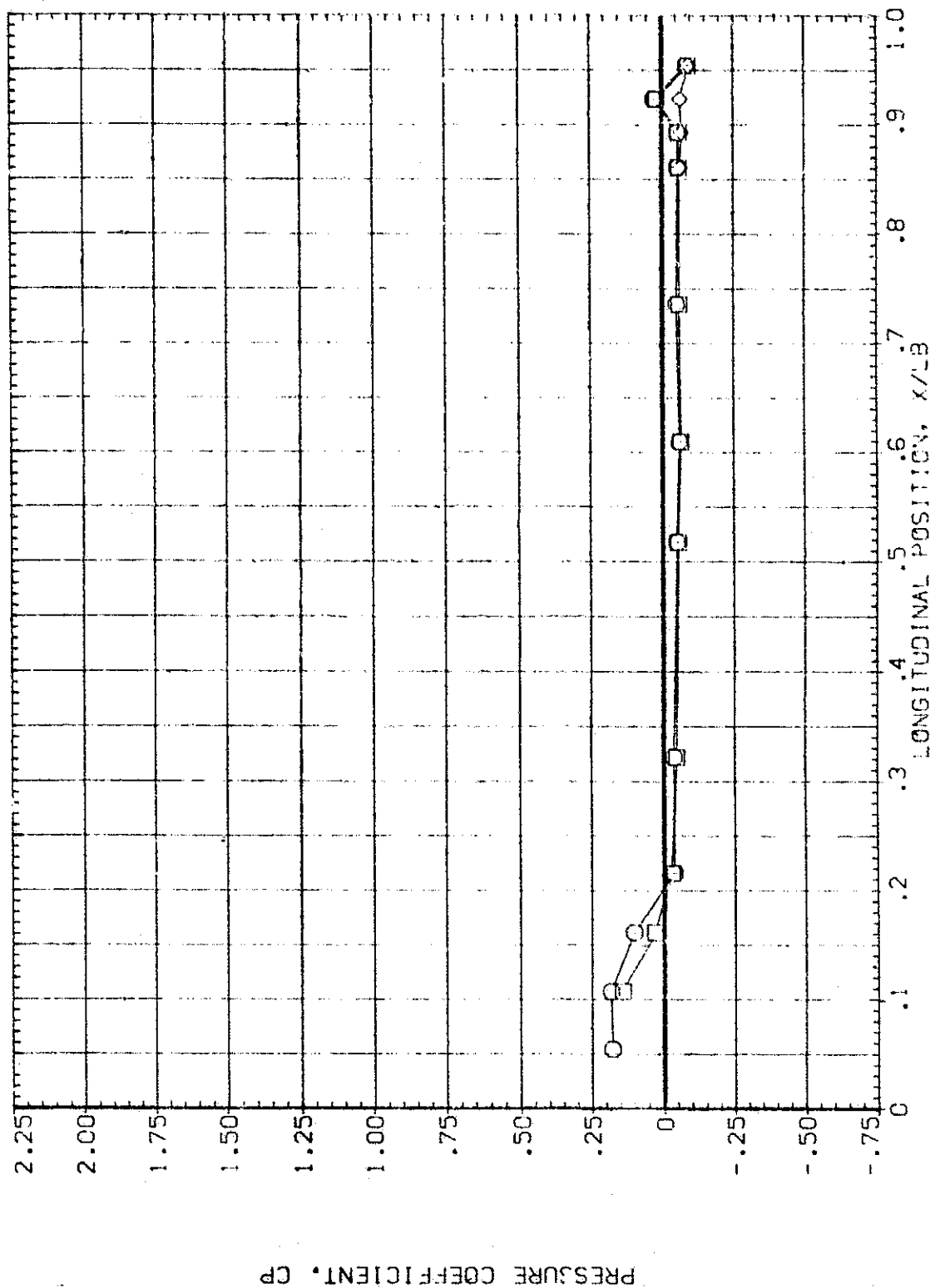


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 24.660

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 OFFSET  
 PH

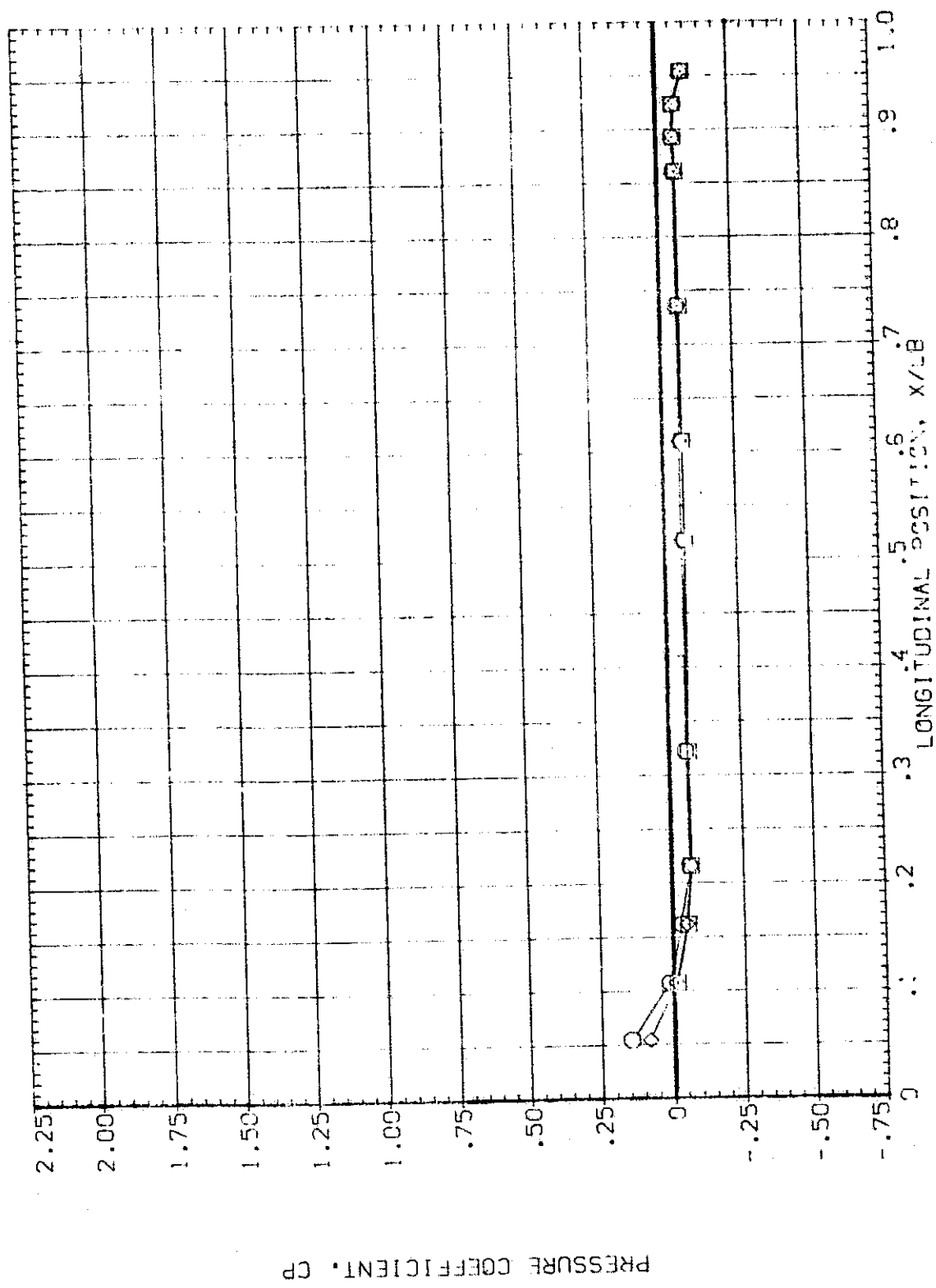


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A019)

SYMBOL  
□  
◇

THETA  
112.500  
135.000  
157.500

ALPHA  
24.660

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI

20.000  
90.000

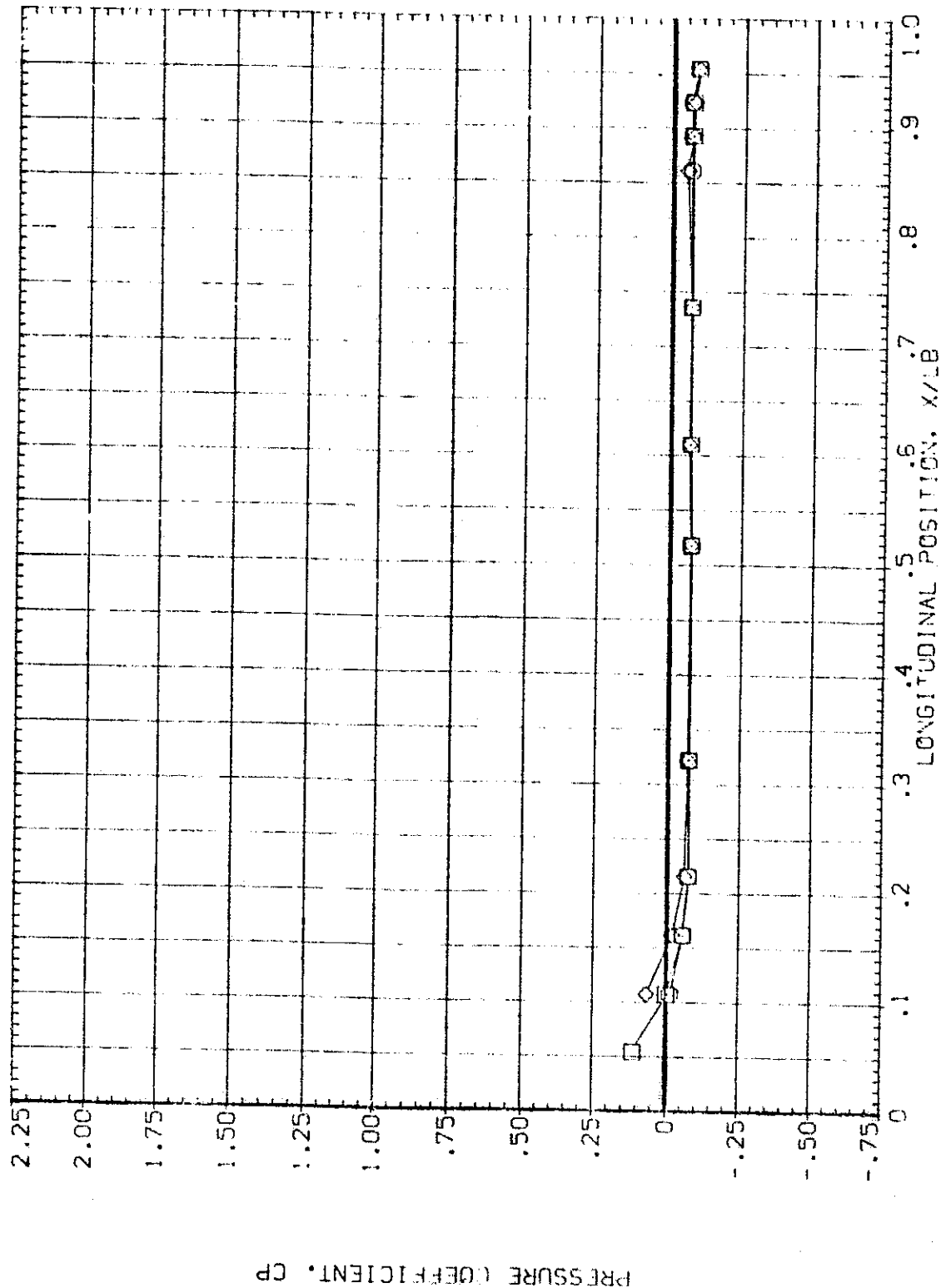


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T: (P1A019)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 180.000  
 202.500  
 225.000

ALPHA  
 24.660

MACH  
 3.480

PARAMETRIC VALUES  
 BETA  
 0.000  
 1.000  
 2.000

20.000  
 20.450  
 20.900

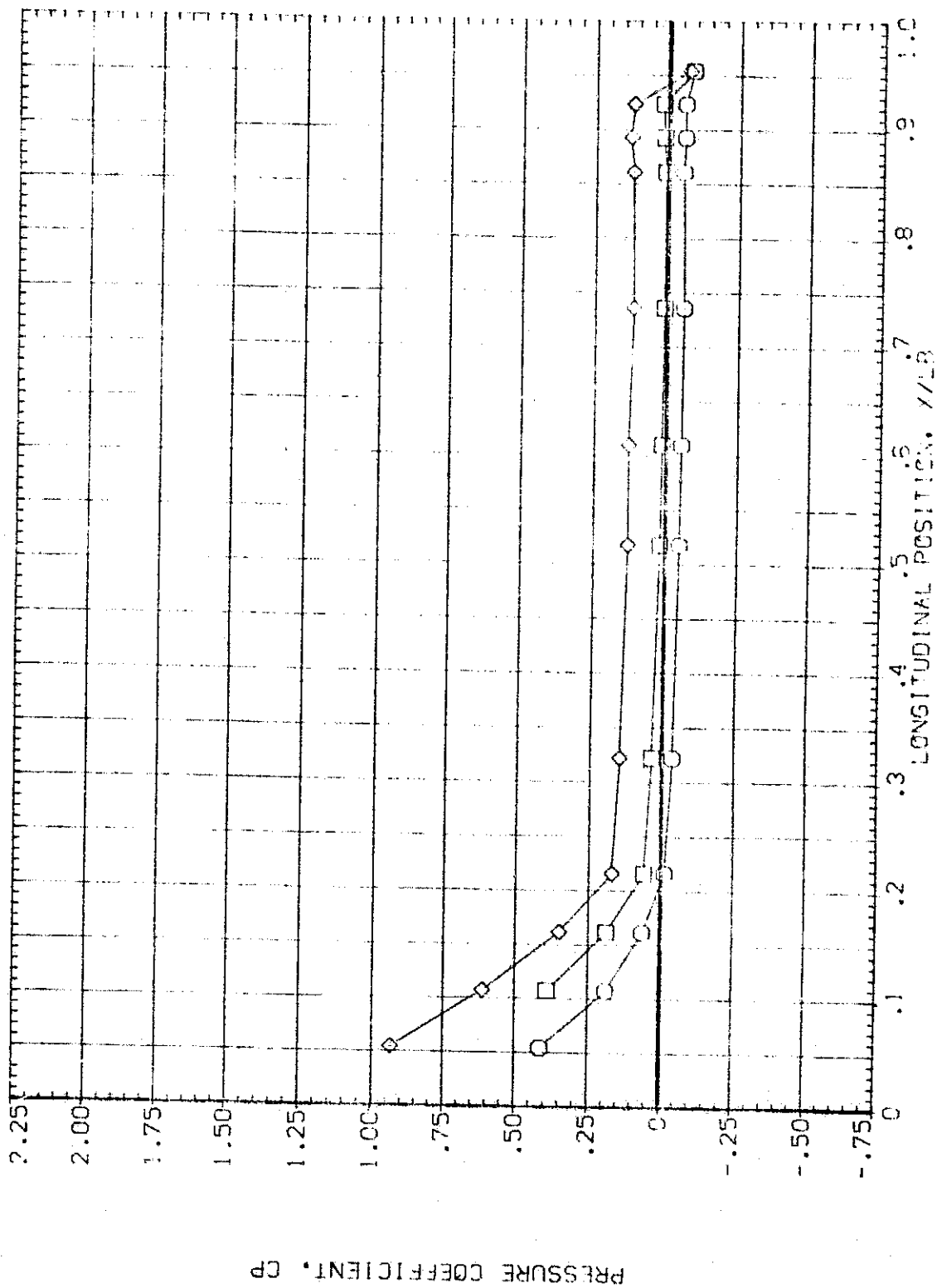


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH DISTURBANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA019)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
24.660

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

OFFSET  
PHI

20.000  
90.000

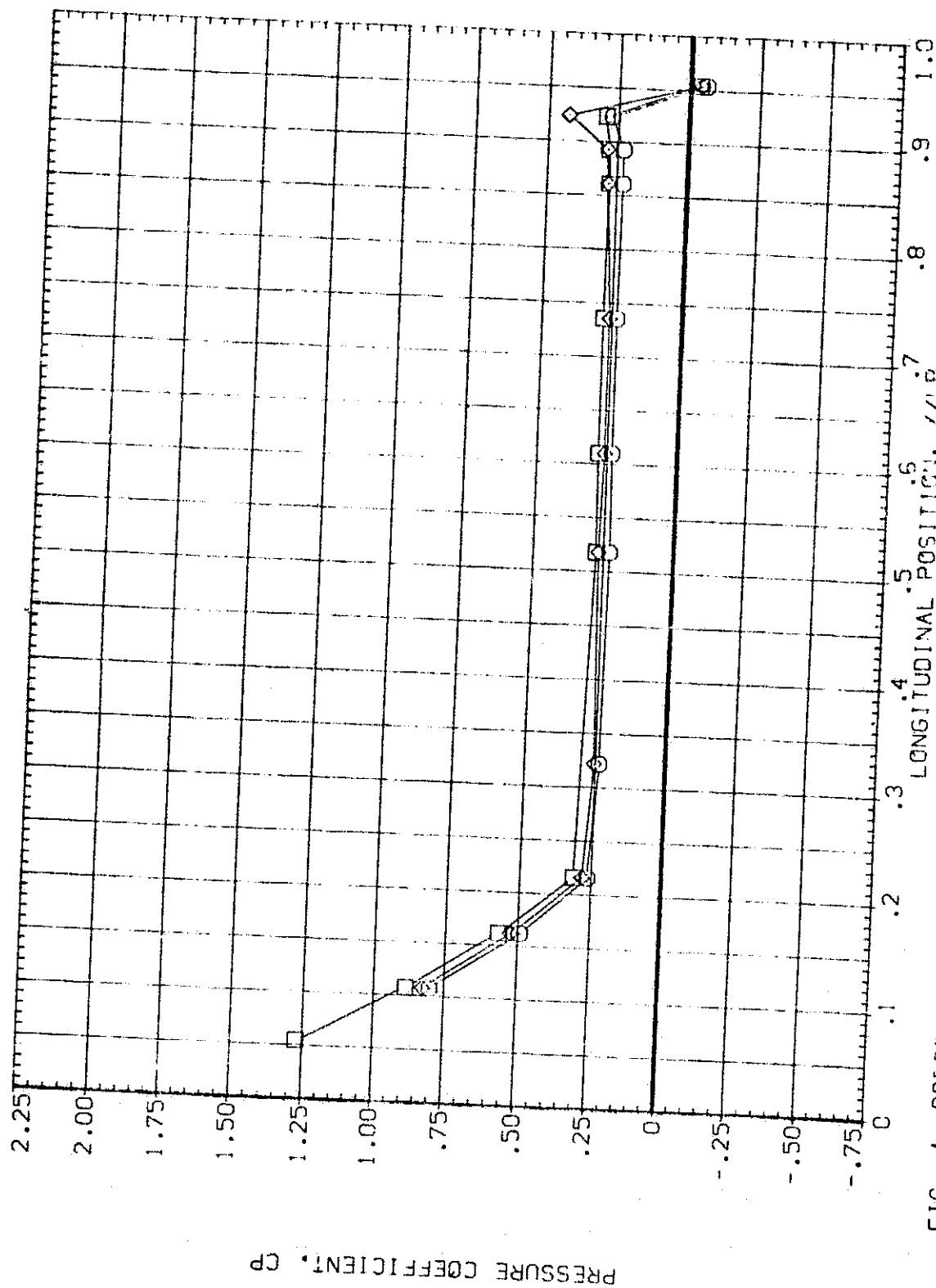


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	24.660	3.480	.000	DEFSET
□	326.000			1.000	PHI
◇	346.000				

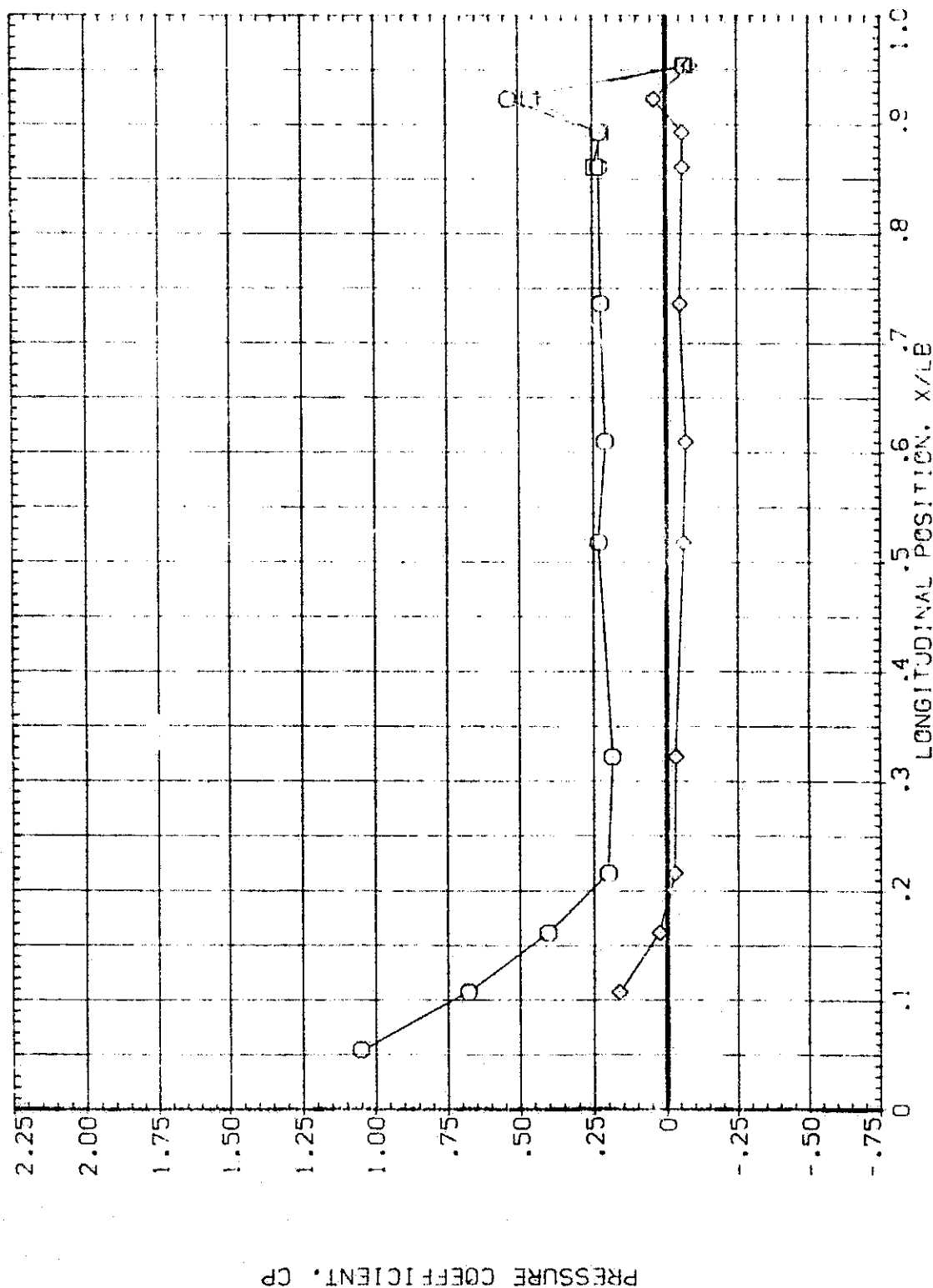


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A020)

PARAMETRIC VALUES	BETA	PHI	OFFSET	20.000
	1.000	90.000		
THETA	ALPHA	MACH		
.000	28.700	3.480		
14.000				
24.000				

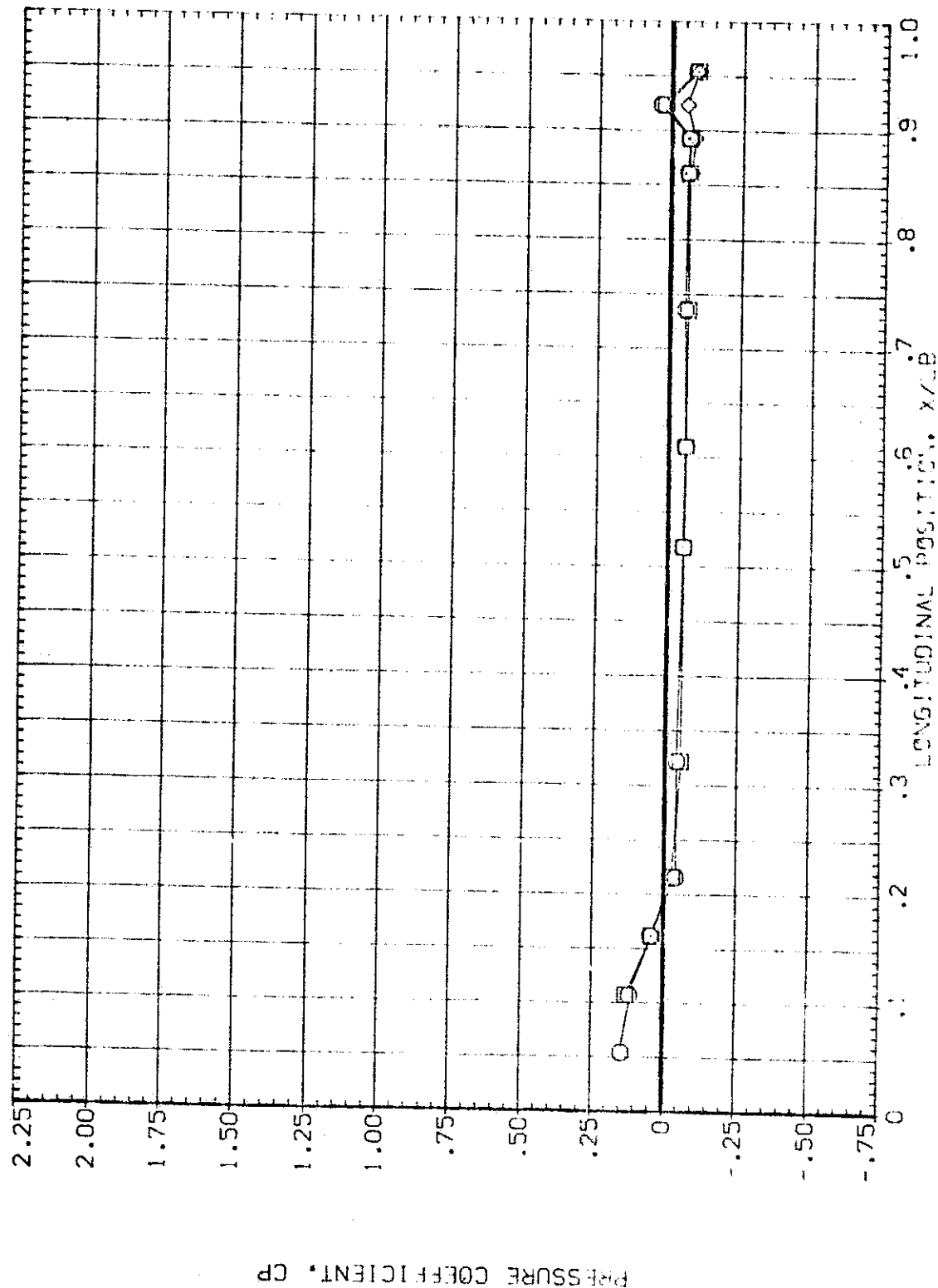


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A020)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 28.700

MACH  
 3.480

BETA  
 MCUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI

20.000  
 90.000

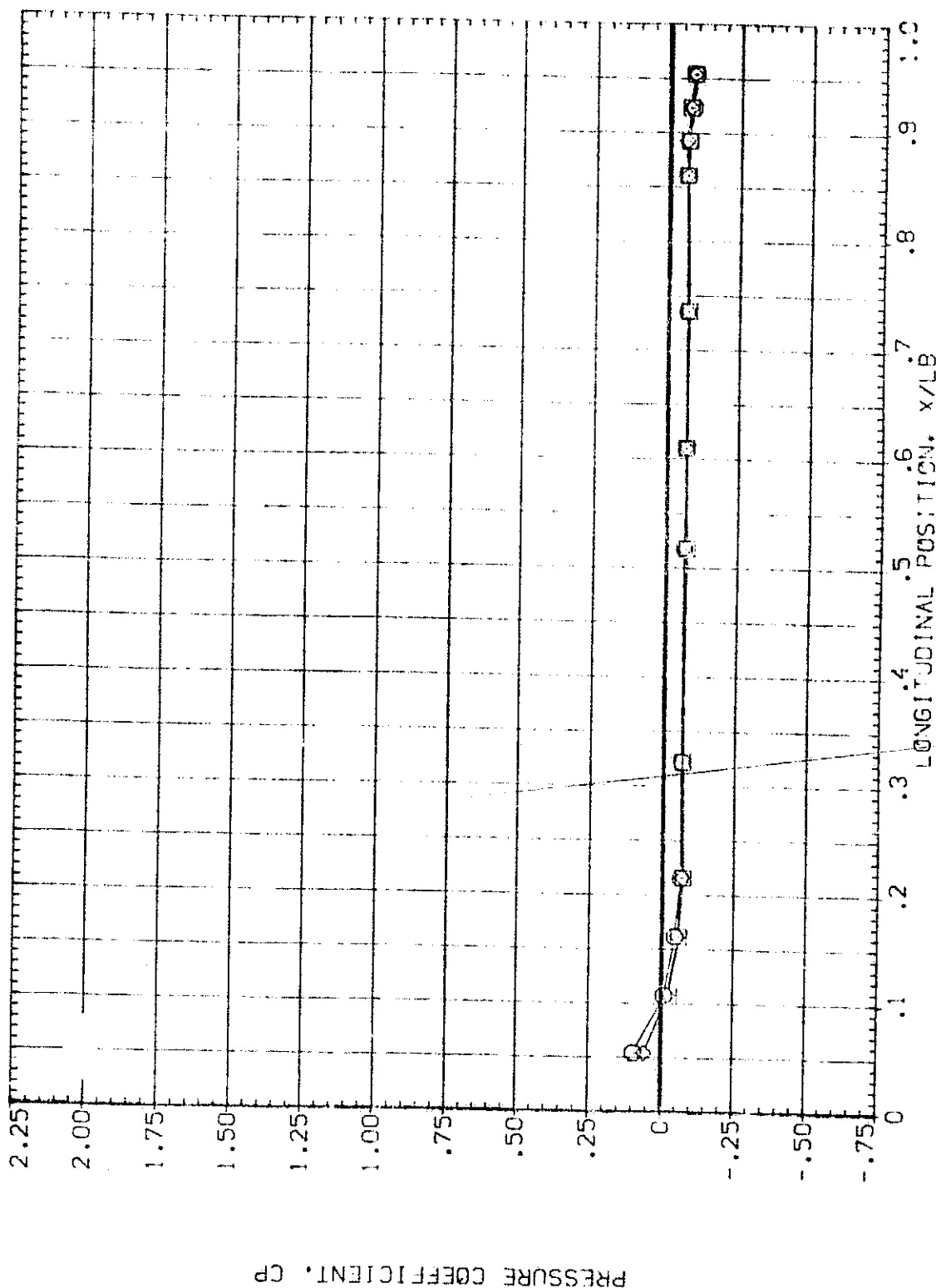


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

BETA  
FIGHT

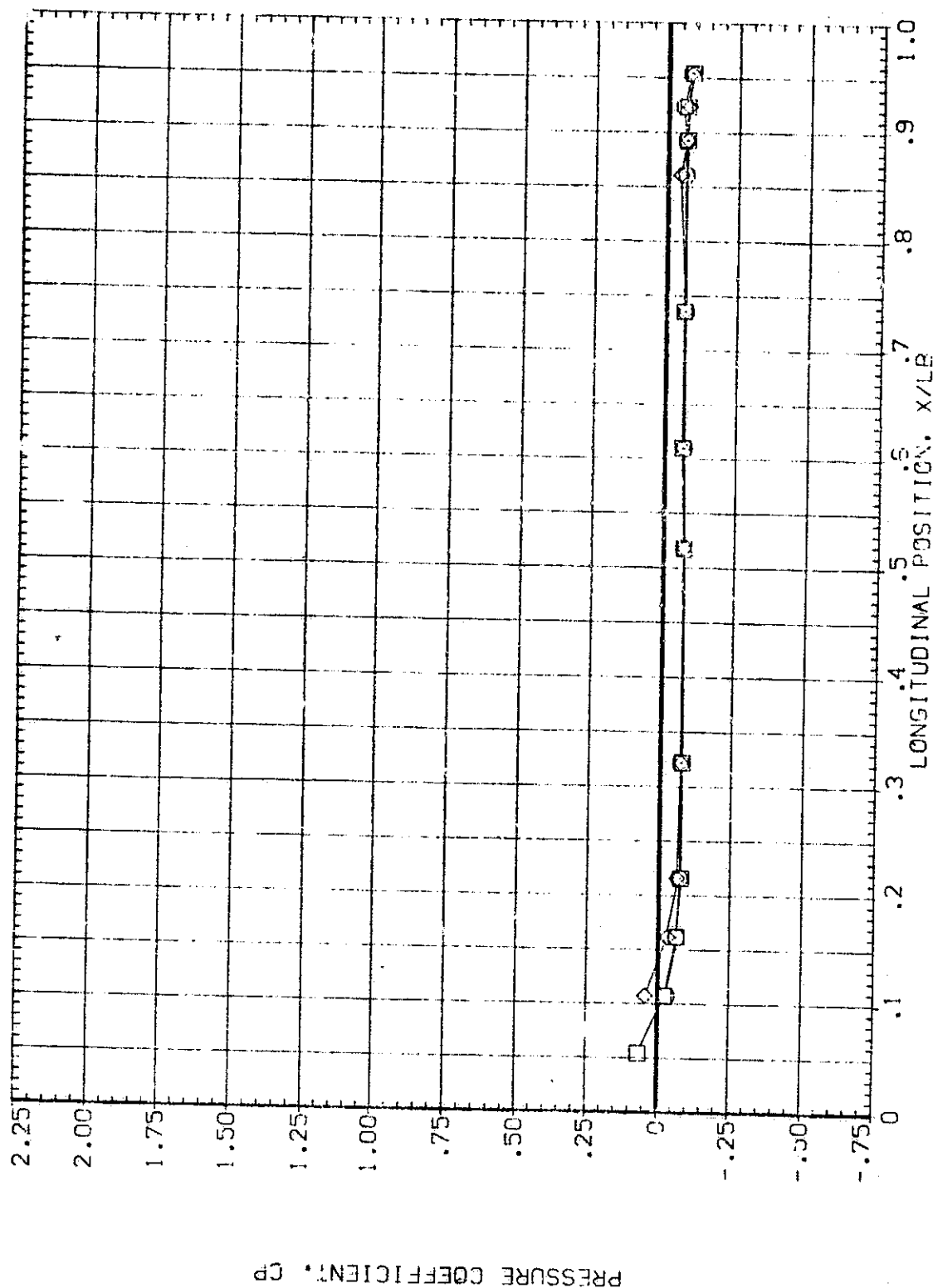


FIG. 4. PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



(P1A020)

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL  
180.000  
202.500  
225.000

THETA  
ALPHA  
HACH  
28.700  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT  
1.000  
1.000  
20.000  
90.000

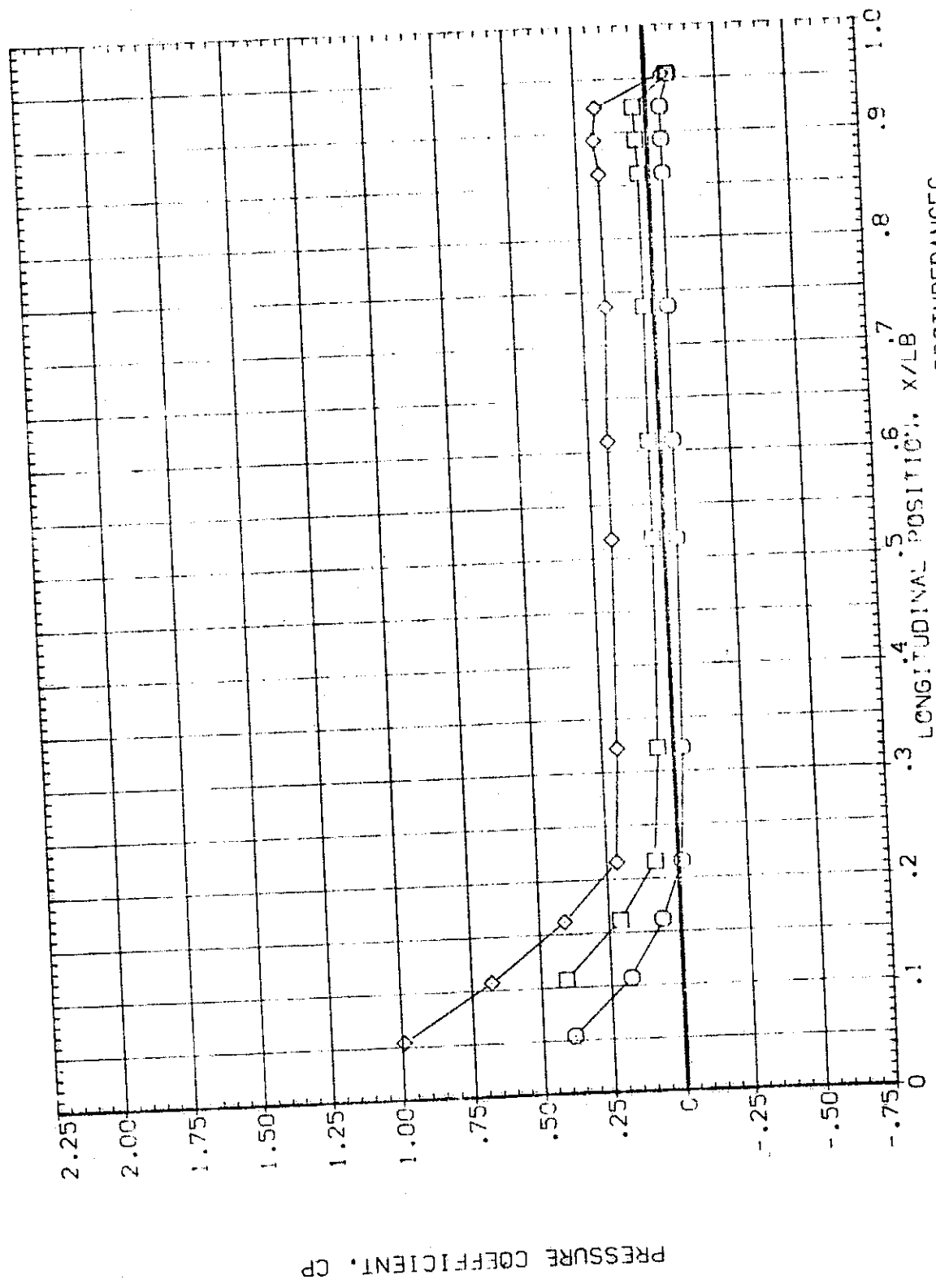


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A020)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
28.700

MACH  
3.480

BETA  
NOUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI  
20.000  
90.000

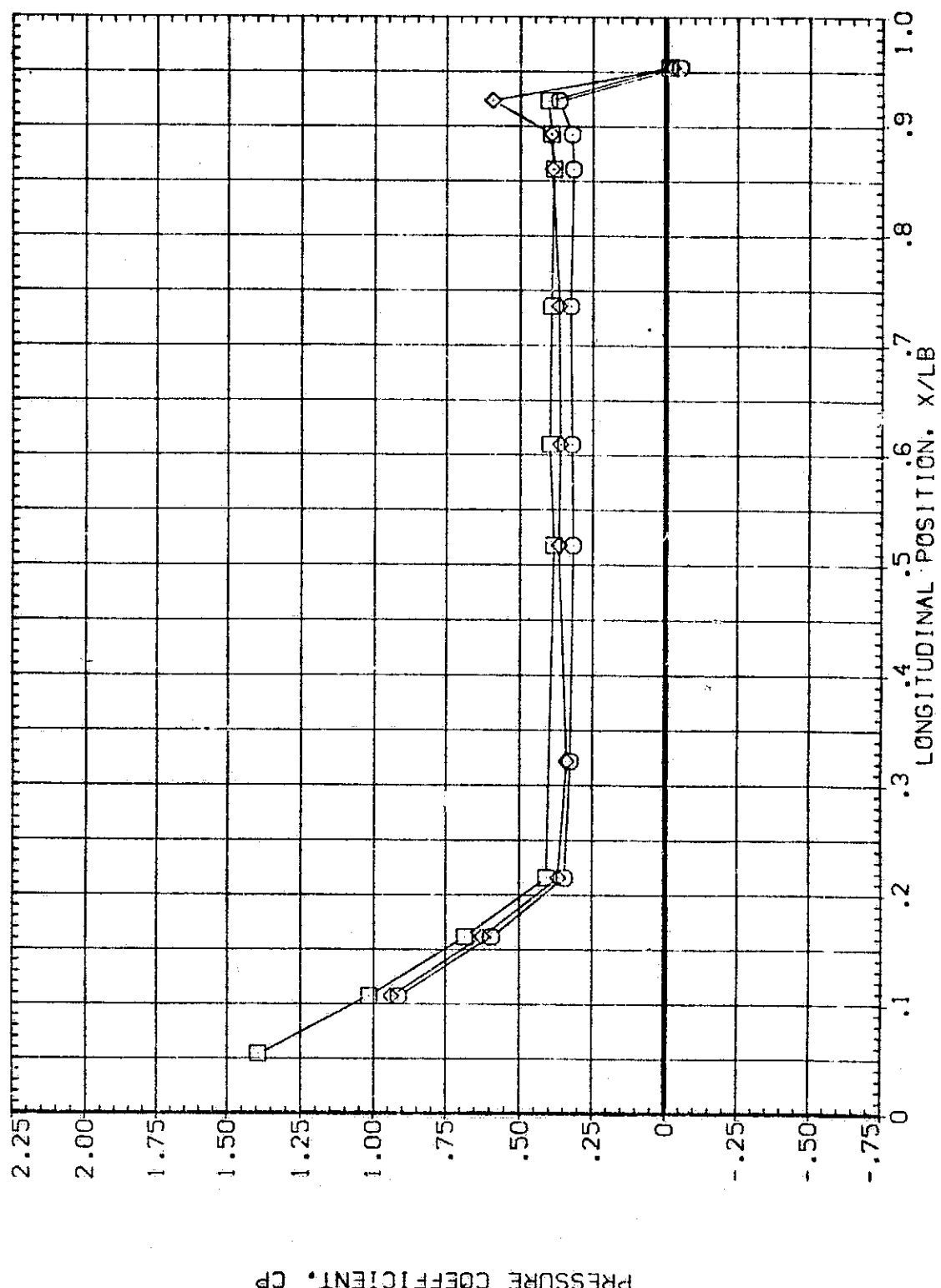


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA020)

SYMBOL  
○  
□  
◇

THETA  
315.000  
326.000  
346.000

ALPHA  
28.700

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.0000 OFFSET  
1.000 PHI

20.000  
90.000

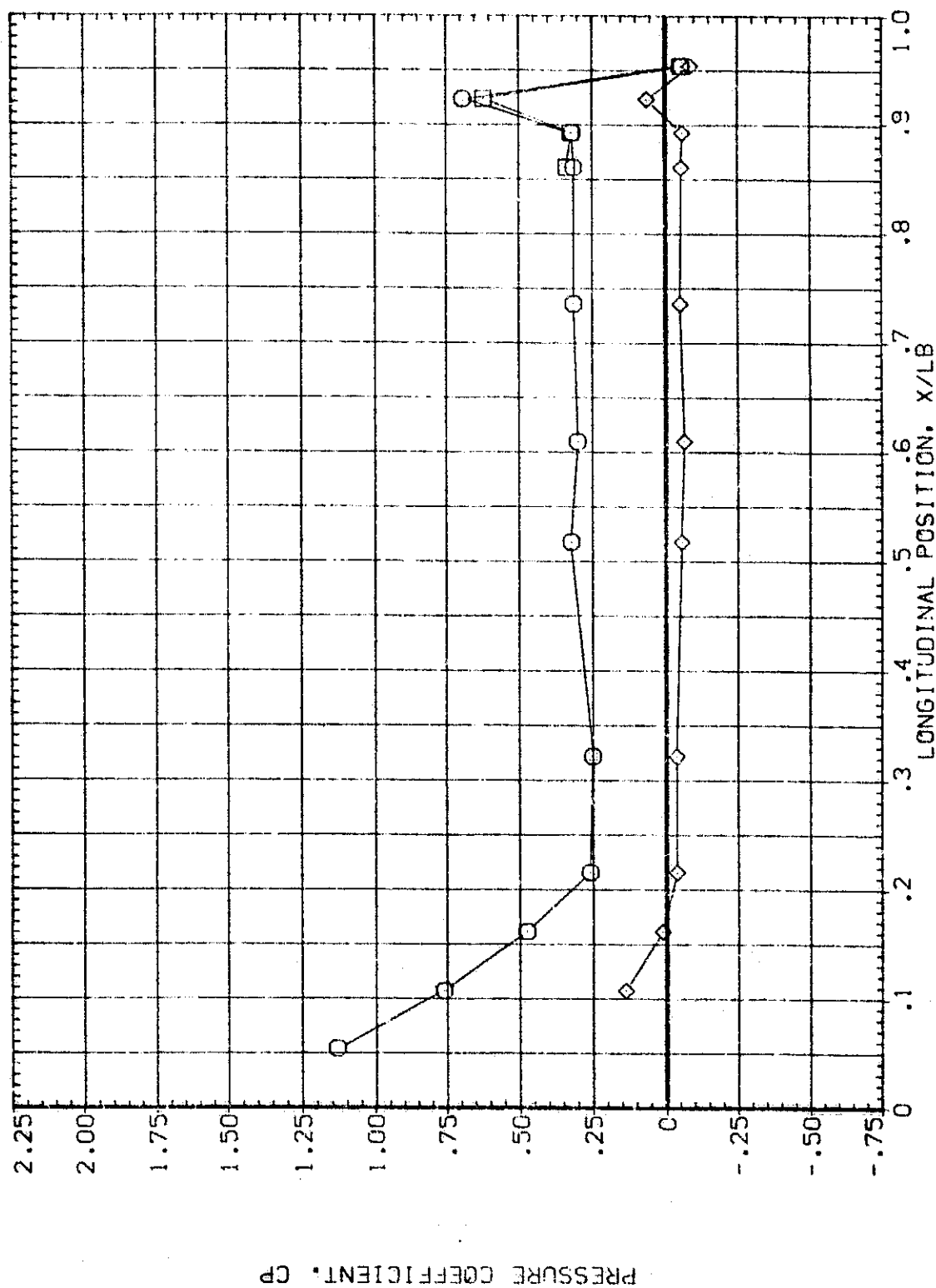


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A021)

SYMBOL  
□  
◇

THETA  
.000  
14.000  
24.000

ALPHA  
-8.360

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI

.000  
135.000

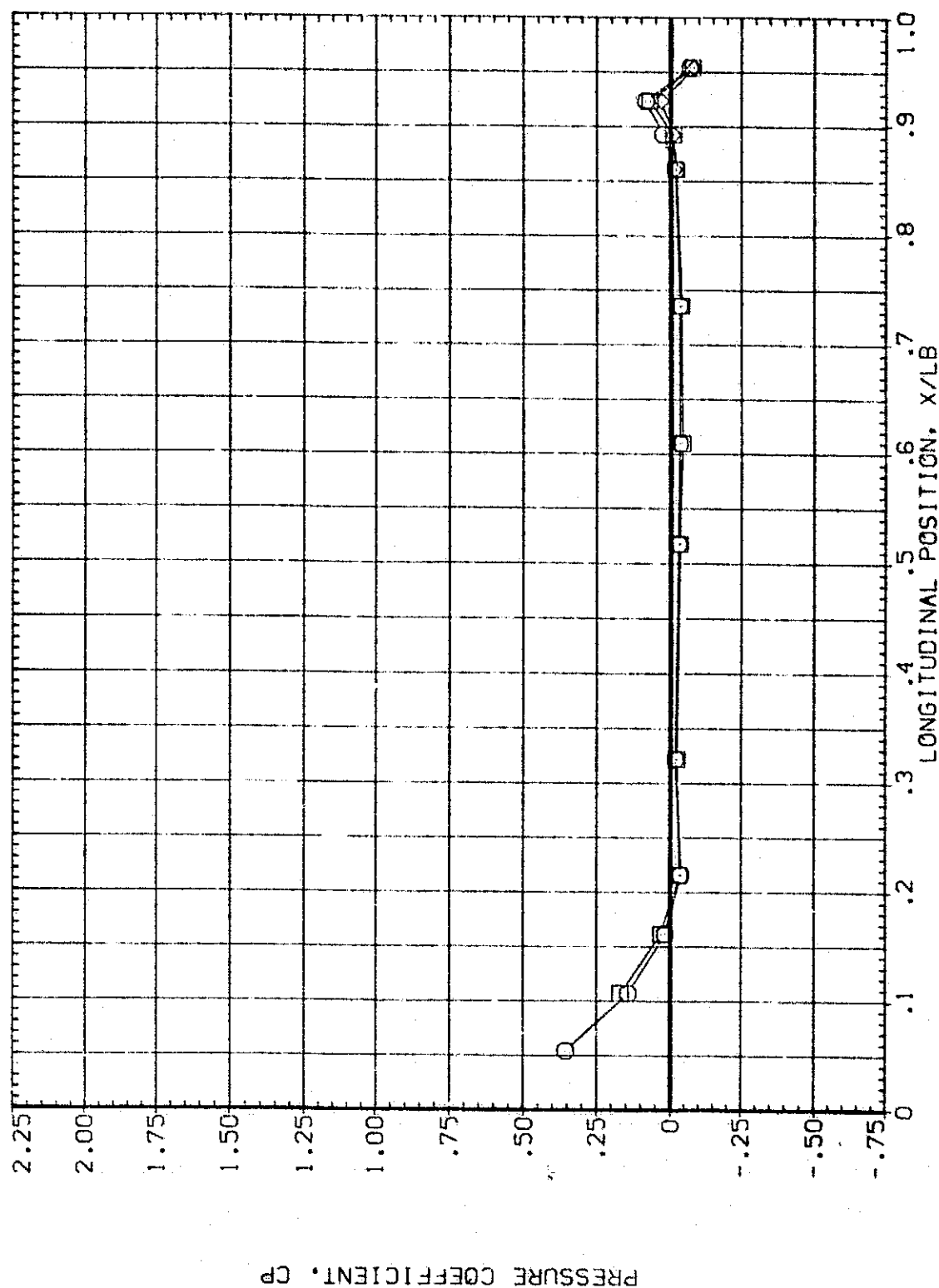


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA021)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	45.000	-8.360	3.480	.000	.000	.000
□	67.500			1.000		135.000
◇	90.000					

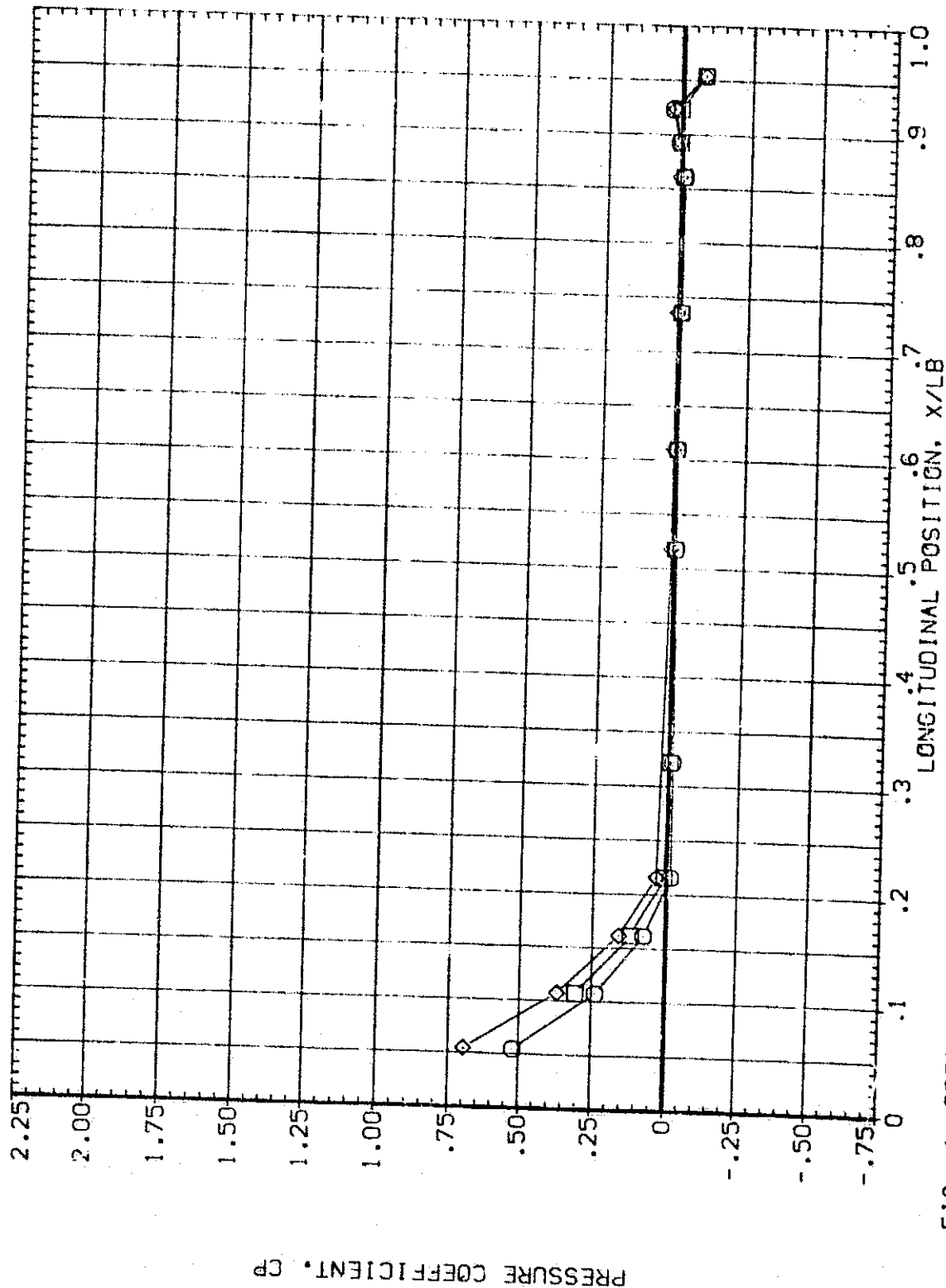


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA021)

SYMBOL

THETA ALPHA MACH  
 112.500 -8.360 3.480  
 135.000  
 157.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI 135.000

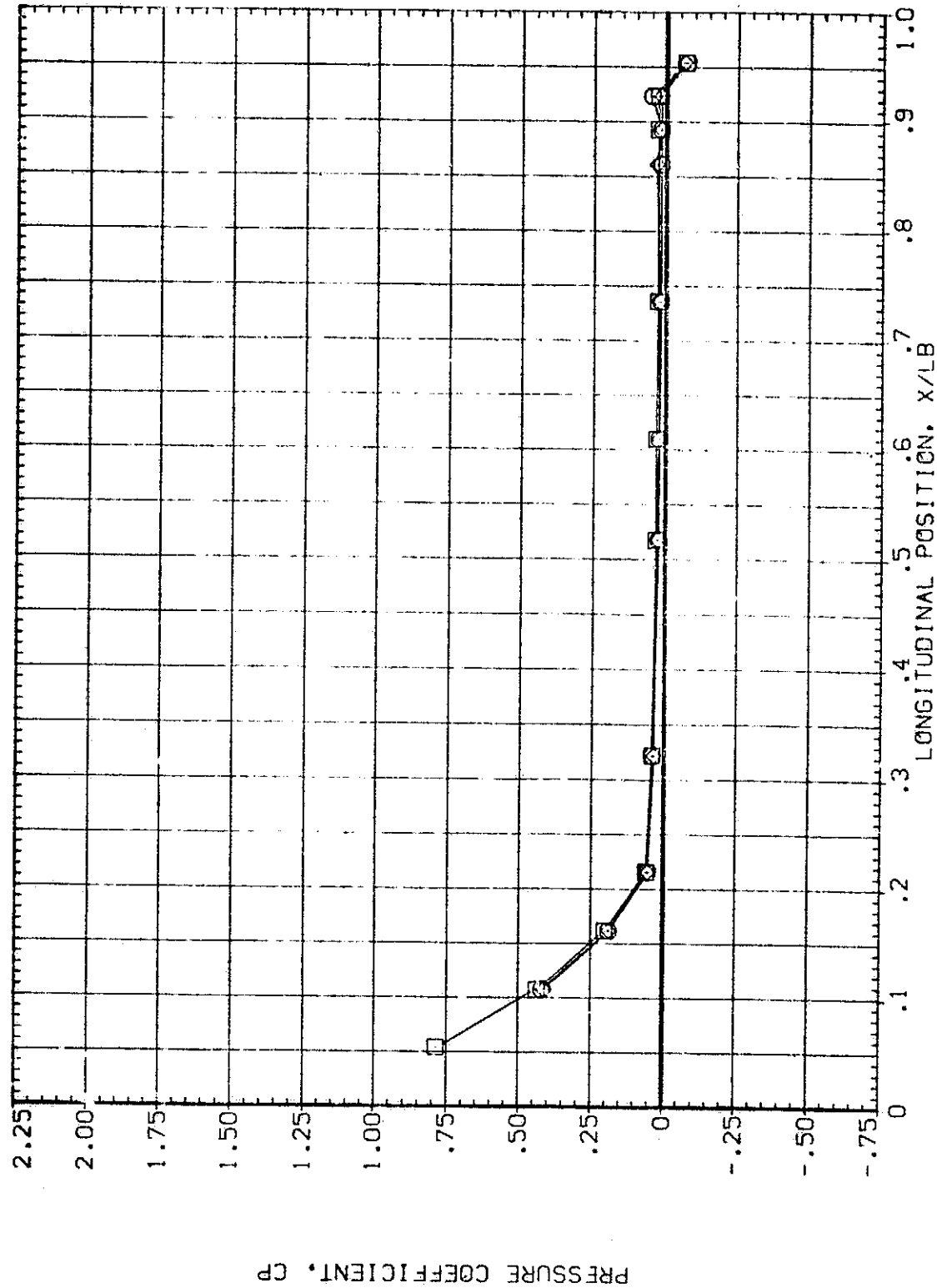


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA021)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 180.000  
 202.500  
 225.000

ALPHA  
 -8.360

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 1.35.000

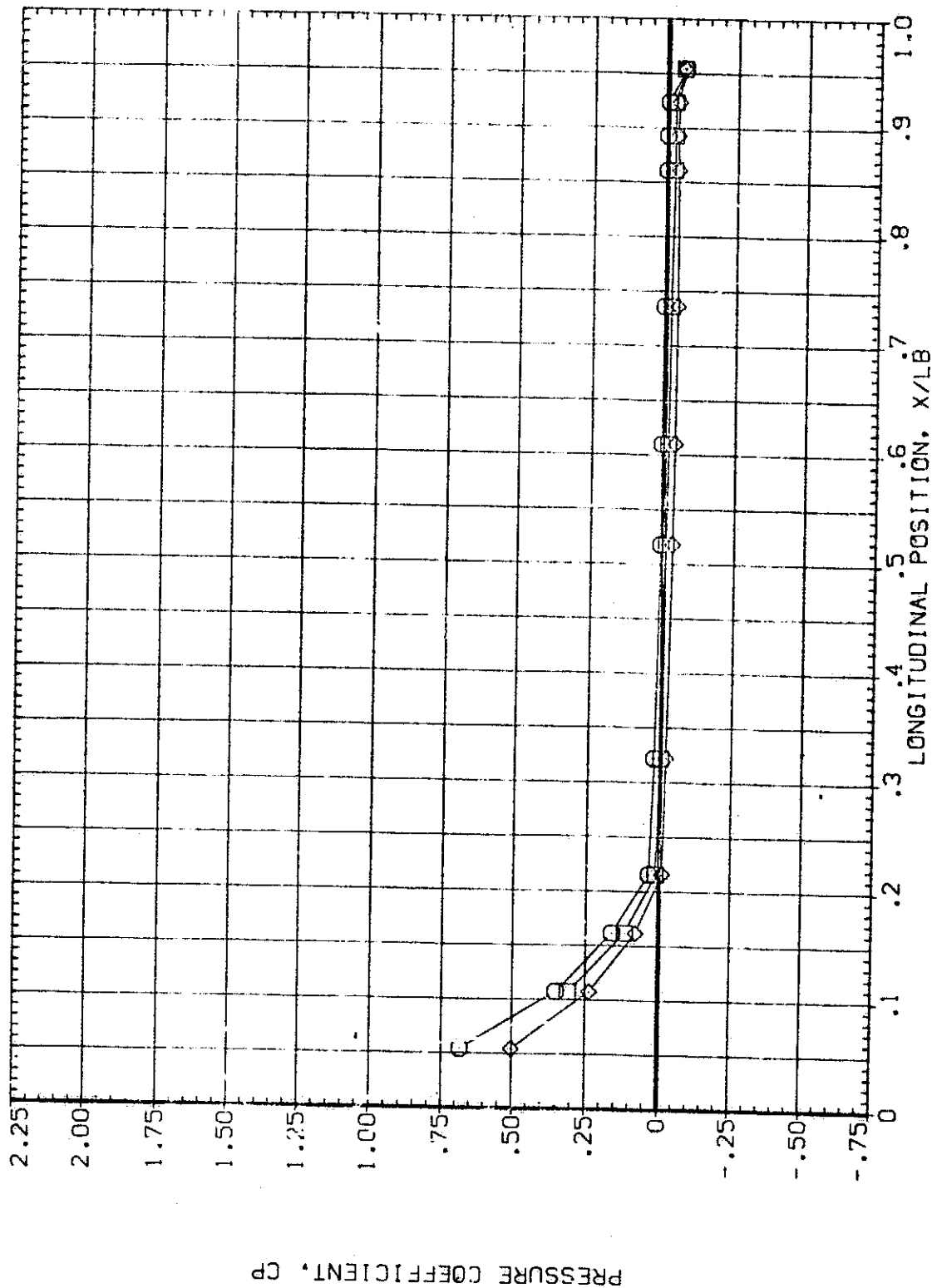


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA021)

SYMBOL  
□  
◇

THETA  
247.500  
270.000  
292.500

ALPHA  
-8.360

MACH  
3.480

BETA  
HDUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI  
135.000

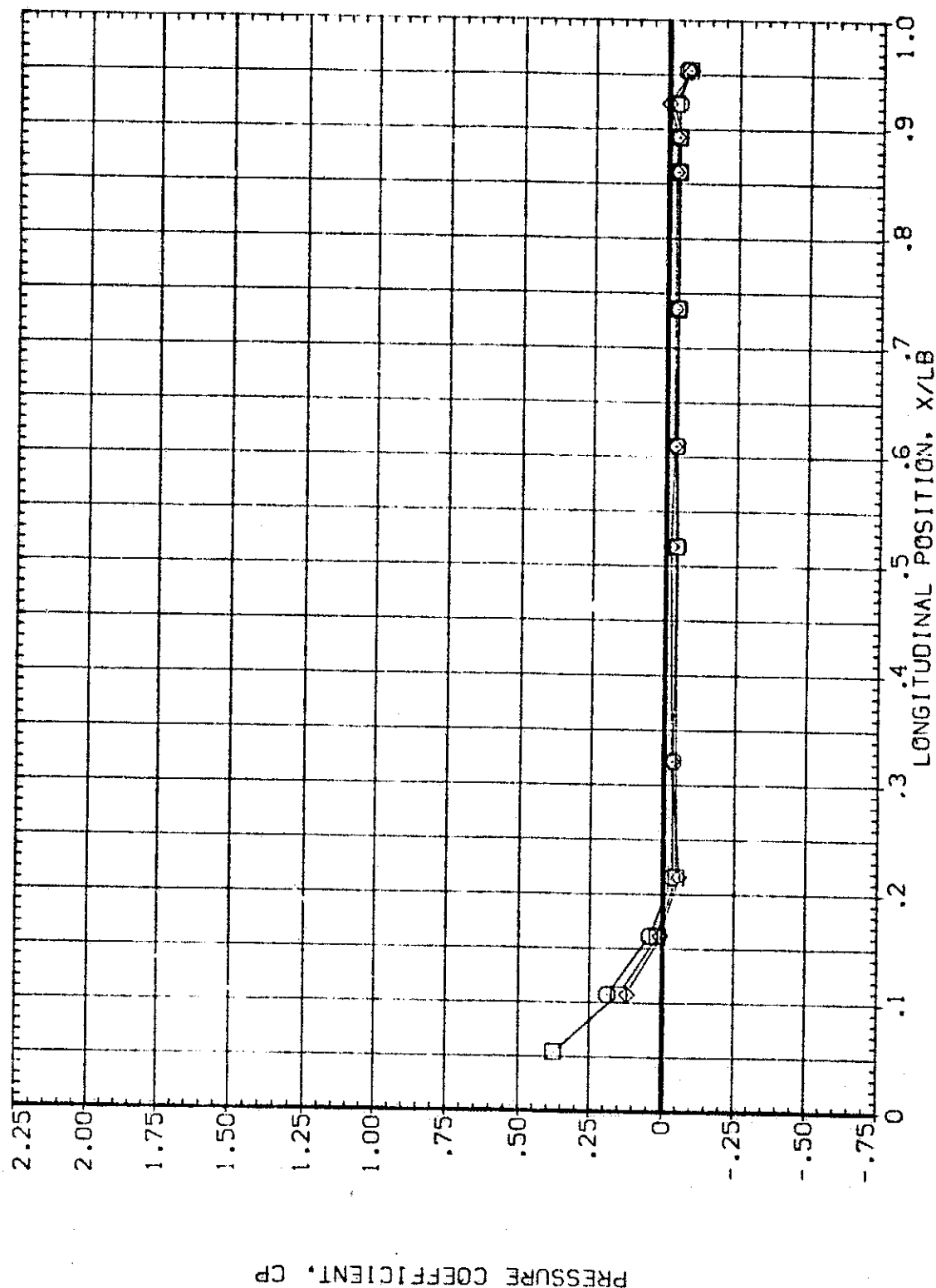


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA021)

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
-9.360

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

.000  
135.000

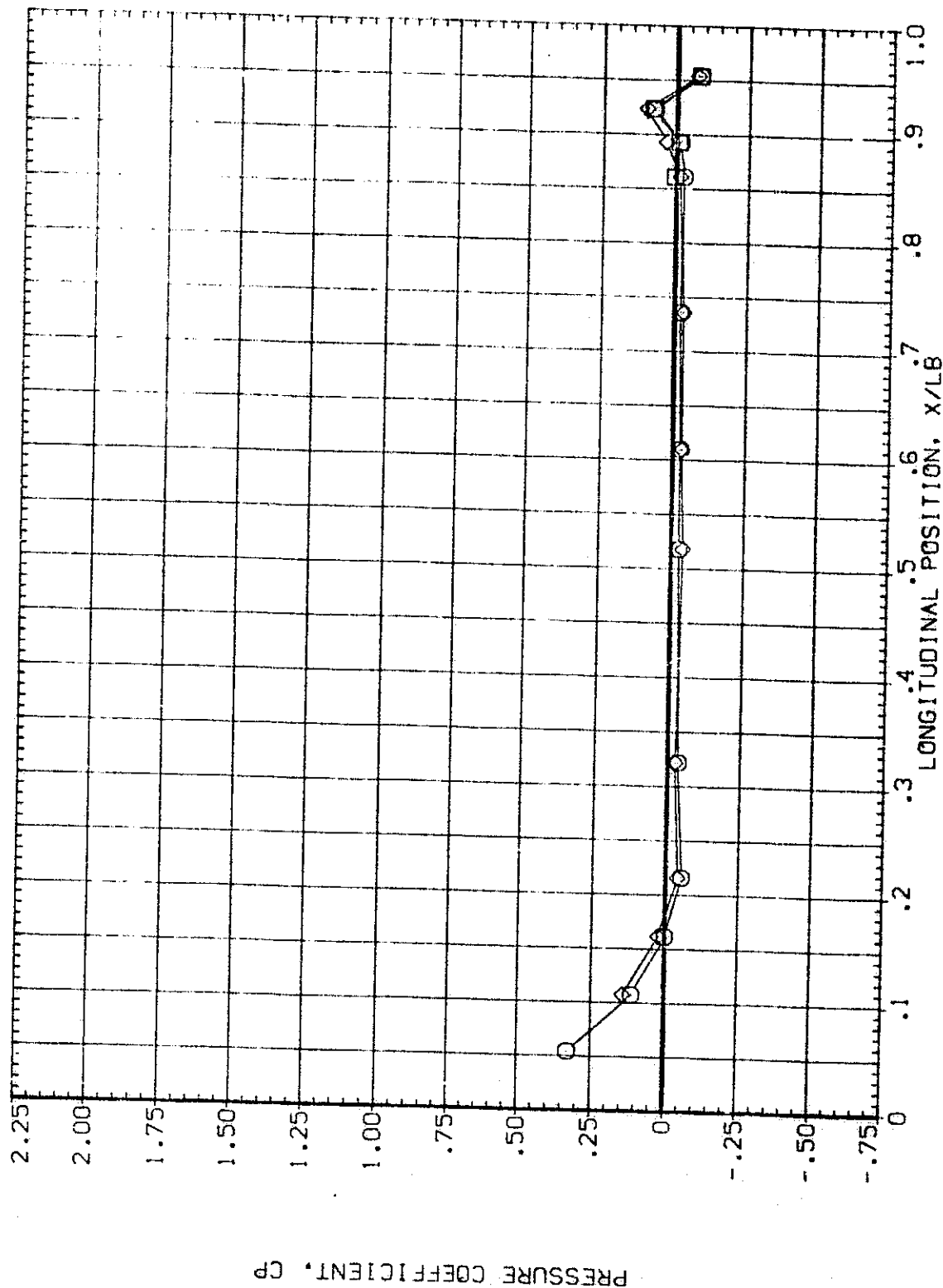


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL

THETA  
0.000  
14.000  
24.000

ALPHA  
-4.330

MACH  
3.480

BETA  
MOUNT

(PIA022)

PARAMETRIC VALUES  
0.000 OFFSET  
1.000 PHI  
135.000

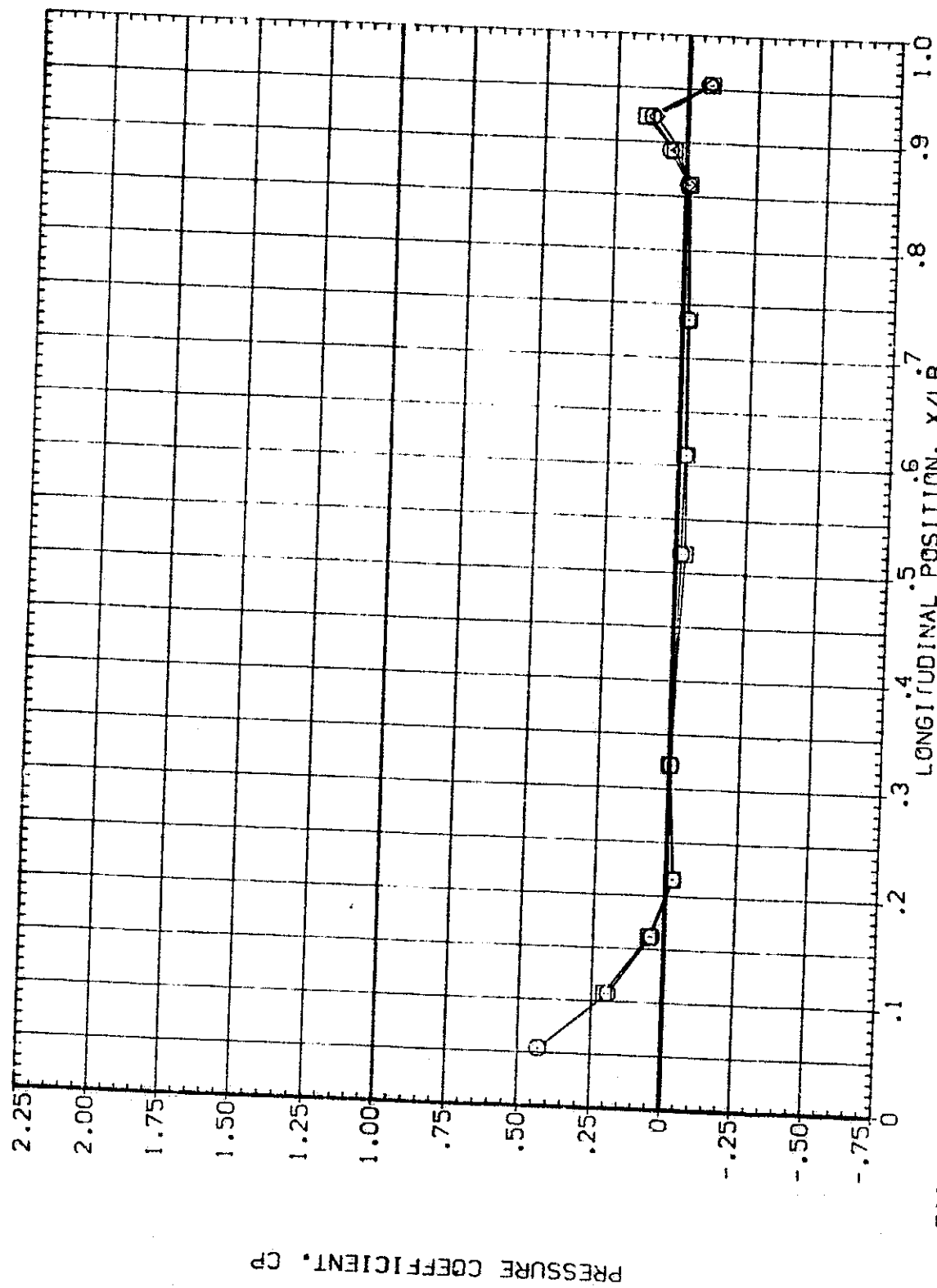


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A022)

SYMBOL  
 ○ □ ◇

THETA ALPHA MACH  
 45.000 -4.330 3.480  
 67.500  
 90.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI 135.000

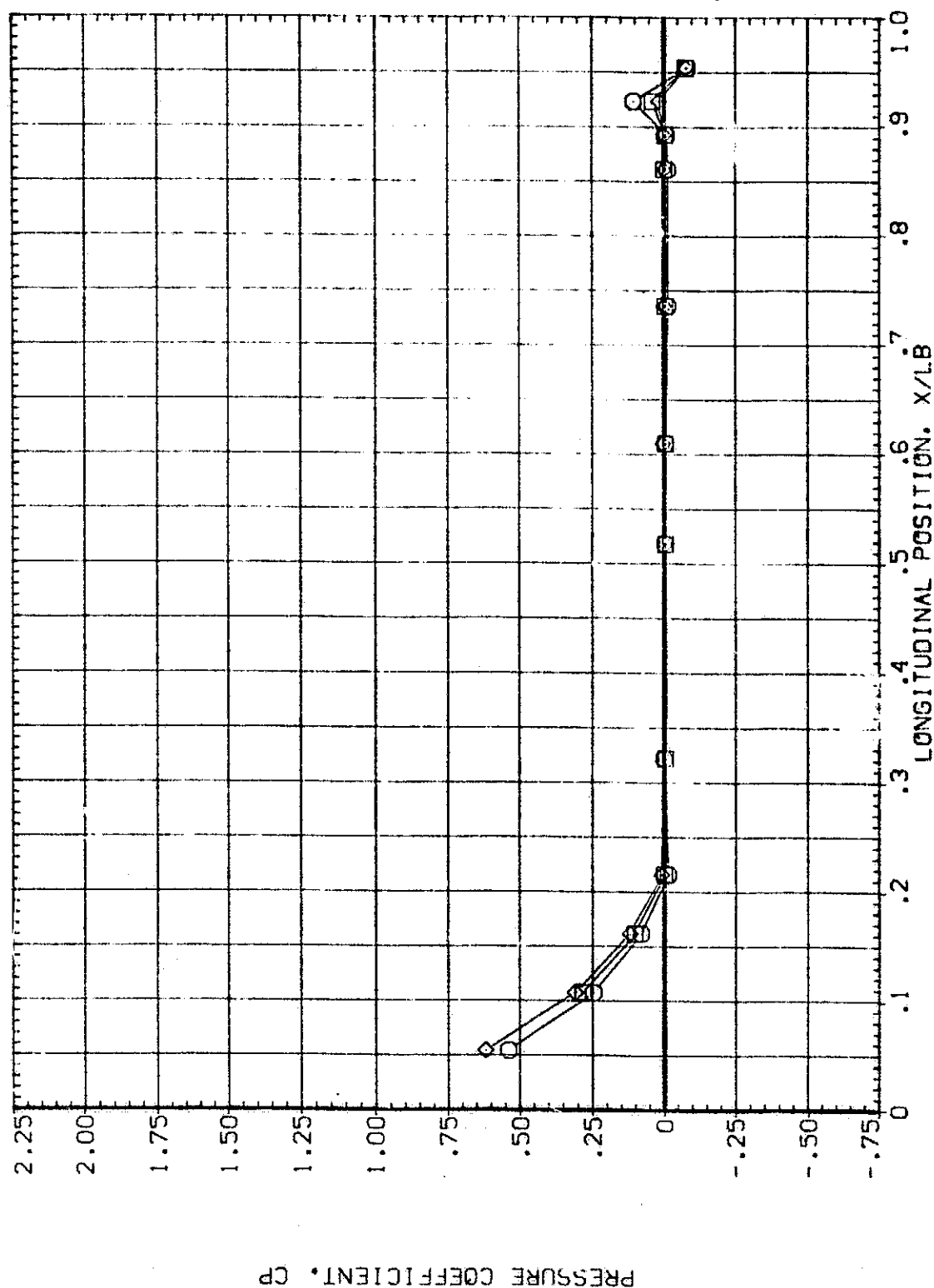


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A022)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 -4.330

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 135.000  
 PHI

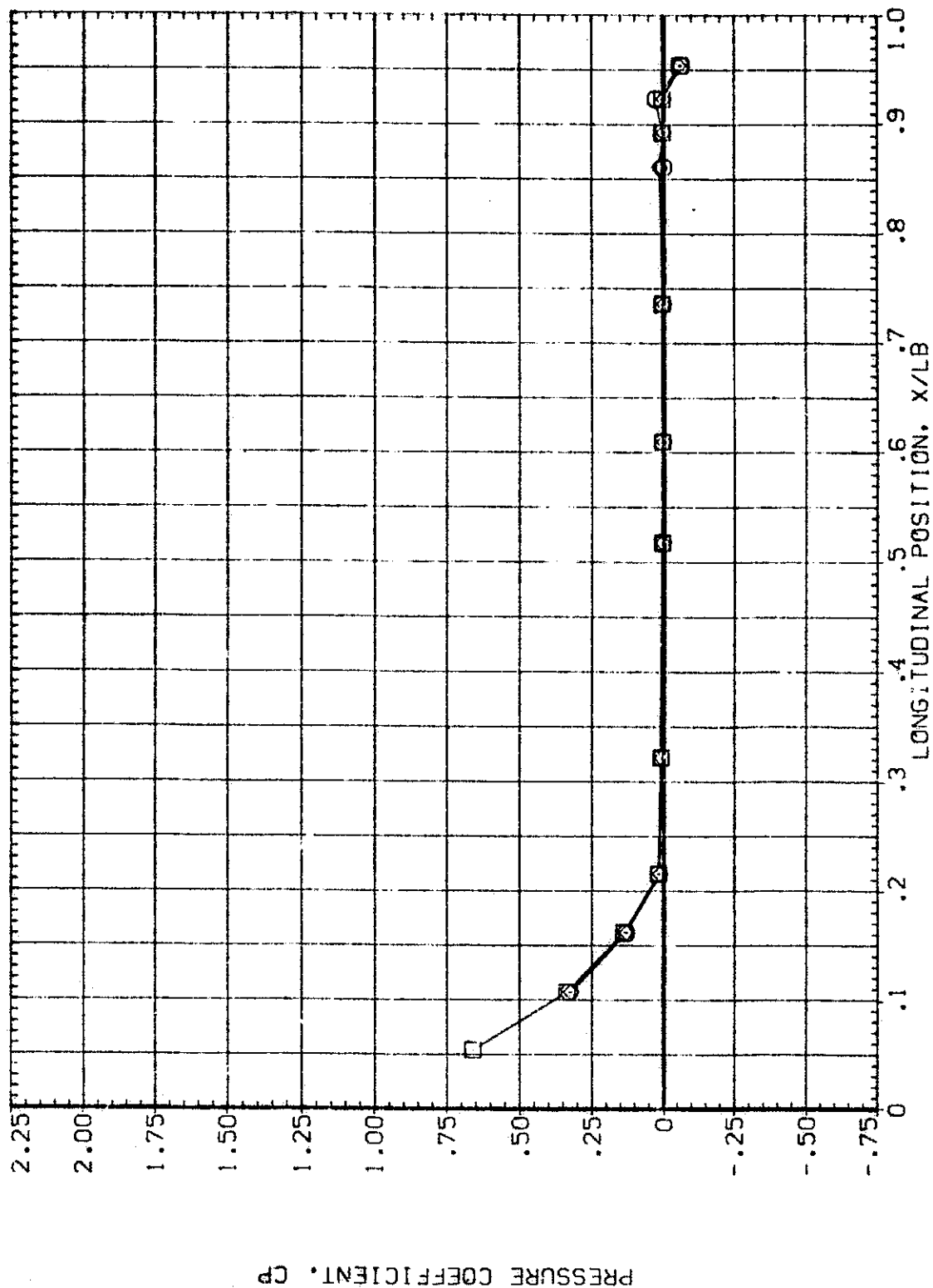


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

(P!A022)

SYMBOL	DESCRIPTION
	Circle
	Square
	Diamond

THETA  
180.000  
272.500  
225.000

ALPHA MACH  
-4.330 3.480

PARAMETRIC VALUES  
 .000 OFFSEY  
 1.000 PHI

135.000  
.000

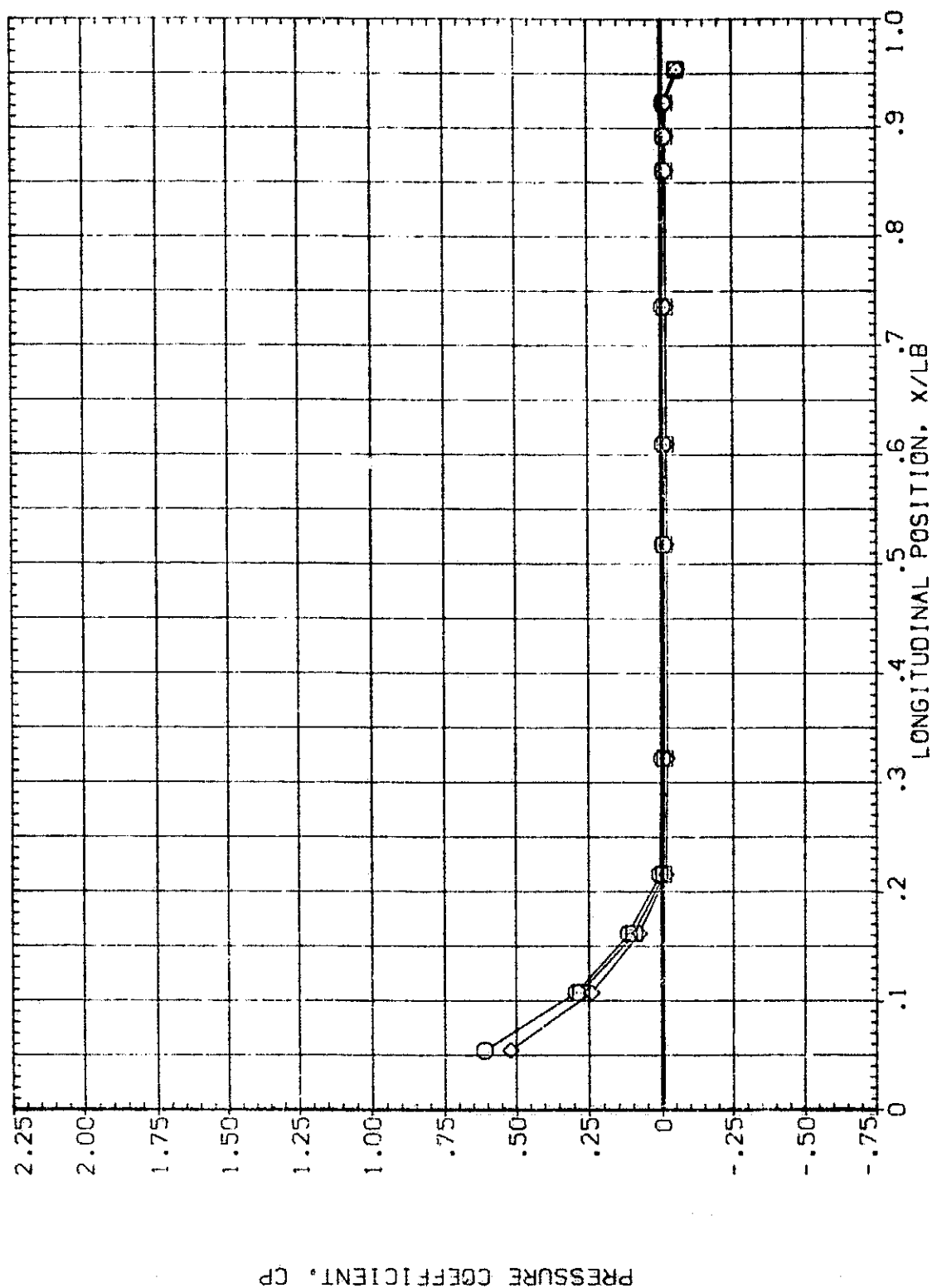


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK T1 (P1A022)

SYMBOL  
 ○  
 □  
 ◇

THETA 247.500  
 270.000  
 292.500

ALPHA -4.330

MACH 3.480

PARAMETRIC VALUES  
 BETA  
 MOUNT 1.000 PHI 135.000  
 .000 OFFSET .000

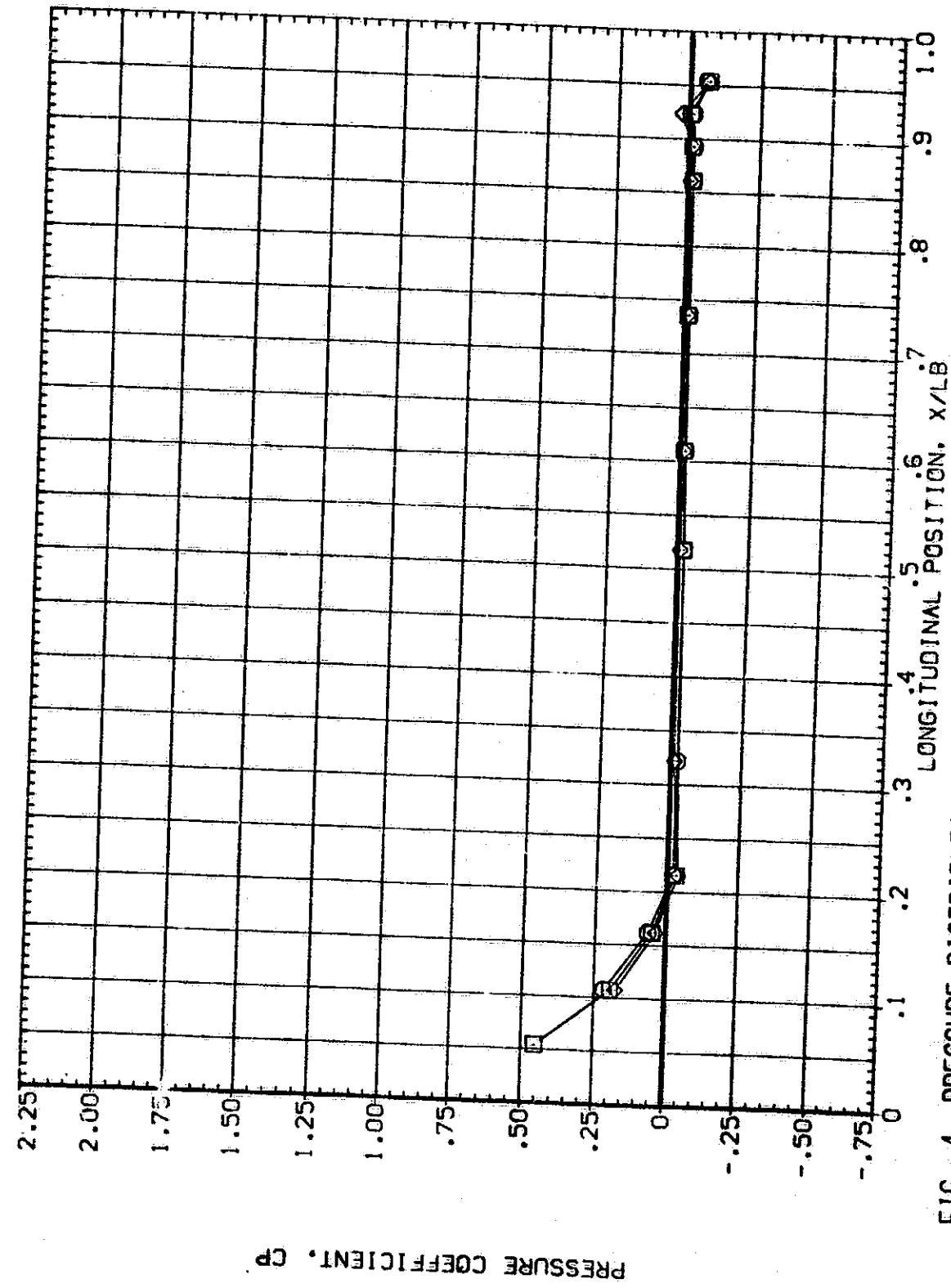


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCRC200 EXTERNAL TANK, T1 (PIA022)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 -4.330

MACH  
 3.480

PARAMETRIC VALUES  
 RETA  
 MSUNT  
 .000  
 1.000  
 .000  
 135.000  
 PHI

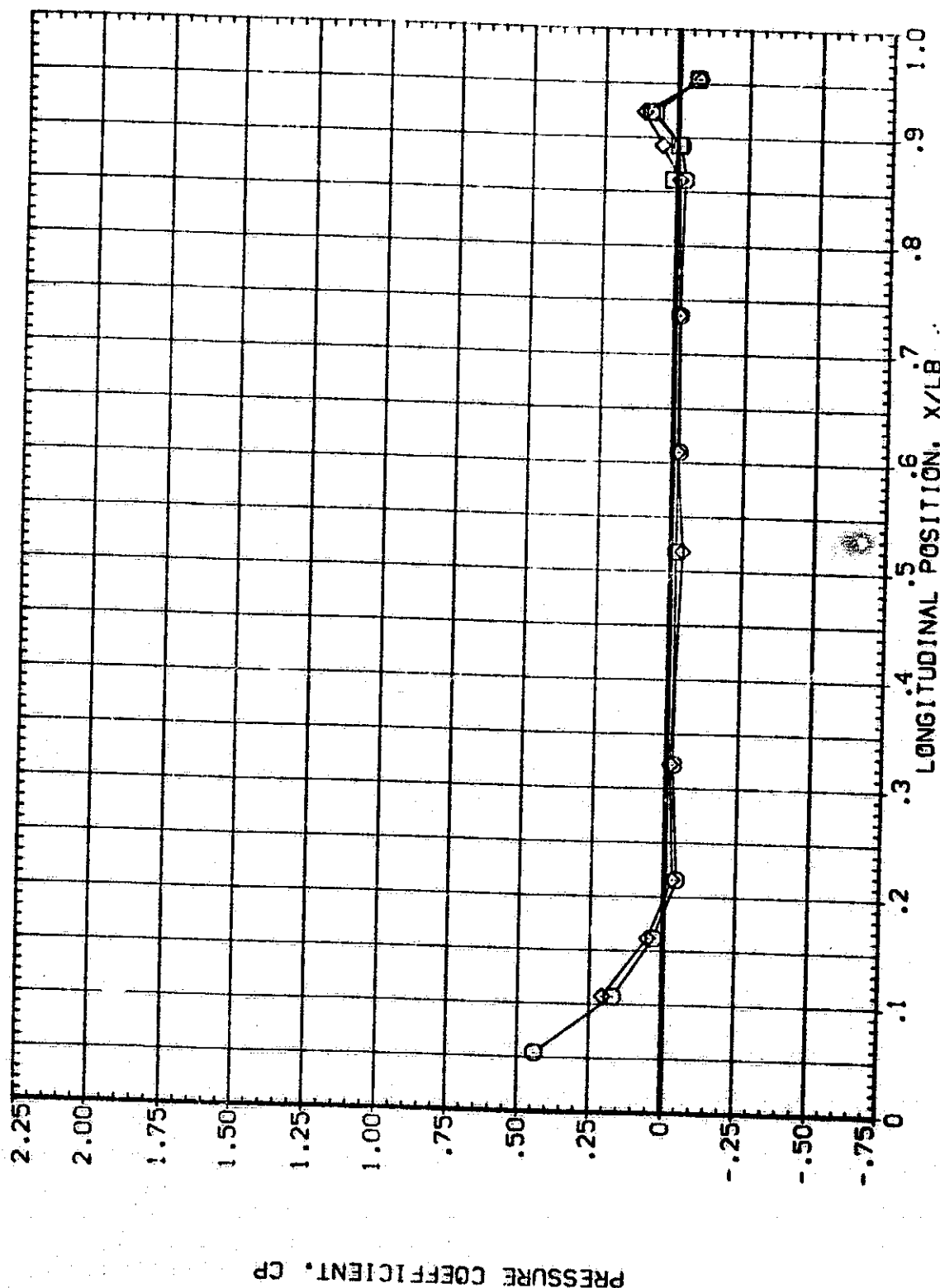


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A023)

SYMBOL

THETA  
0.000  
14.000  
24.000

ALPHA  
-.280

MACH  
3.460

PARAMETRIC VALUES  
BETA  
MOUNT  
1.000  
135.000  
PHI  
.000  
OFFSET  
135.000

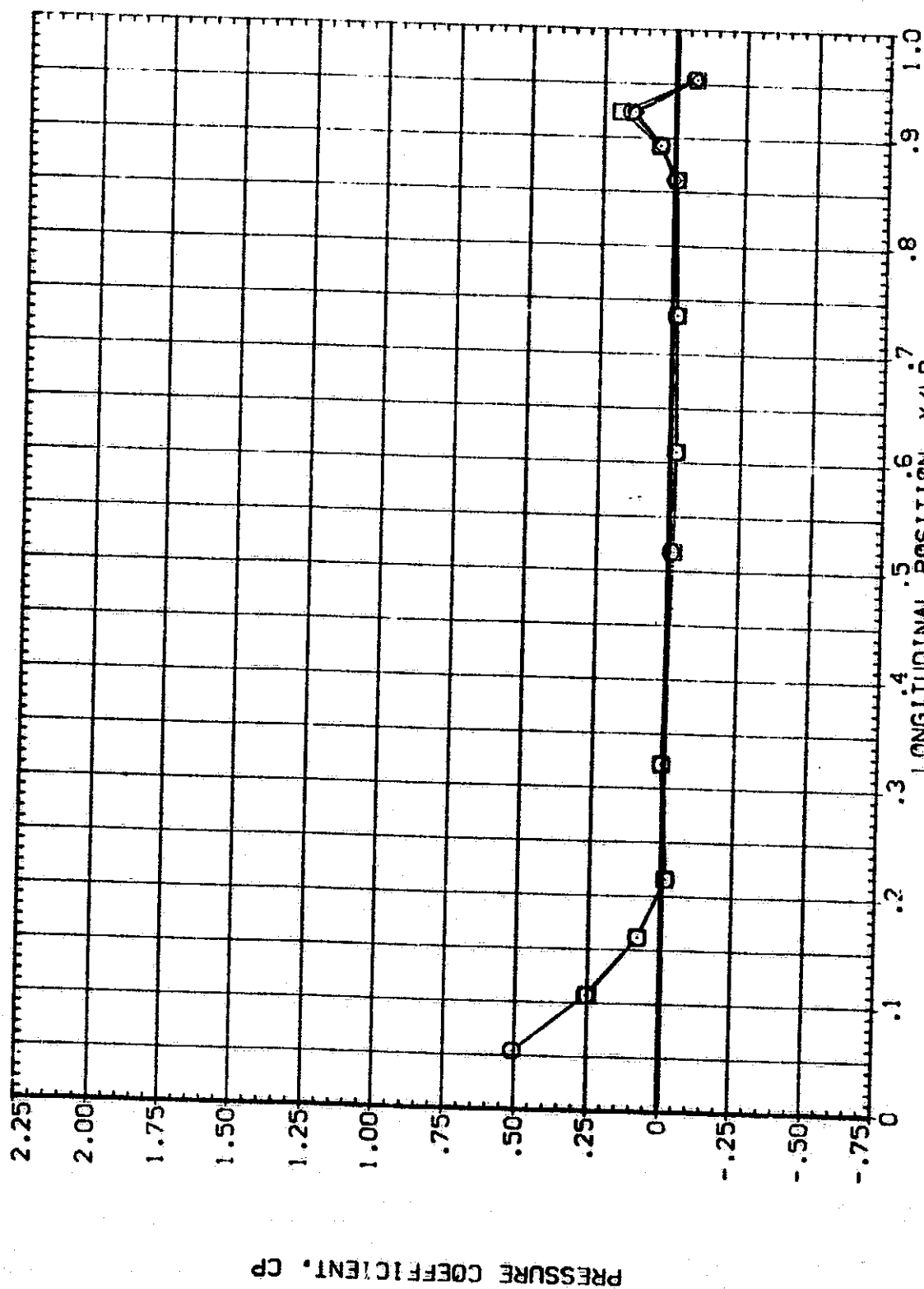


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA023)

SYMBOL  
 □  
 ◇

THETA 45.000  
 67.500  
 90.000

ALPHA -.280

MACH 3.480

BETA .000  
 MOUNT 1.000

PARAMETRIC VALUES  
 OFFSET .000  
 PHI 105.000

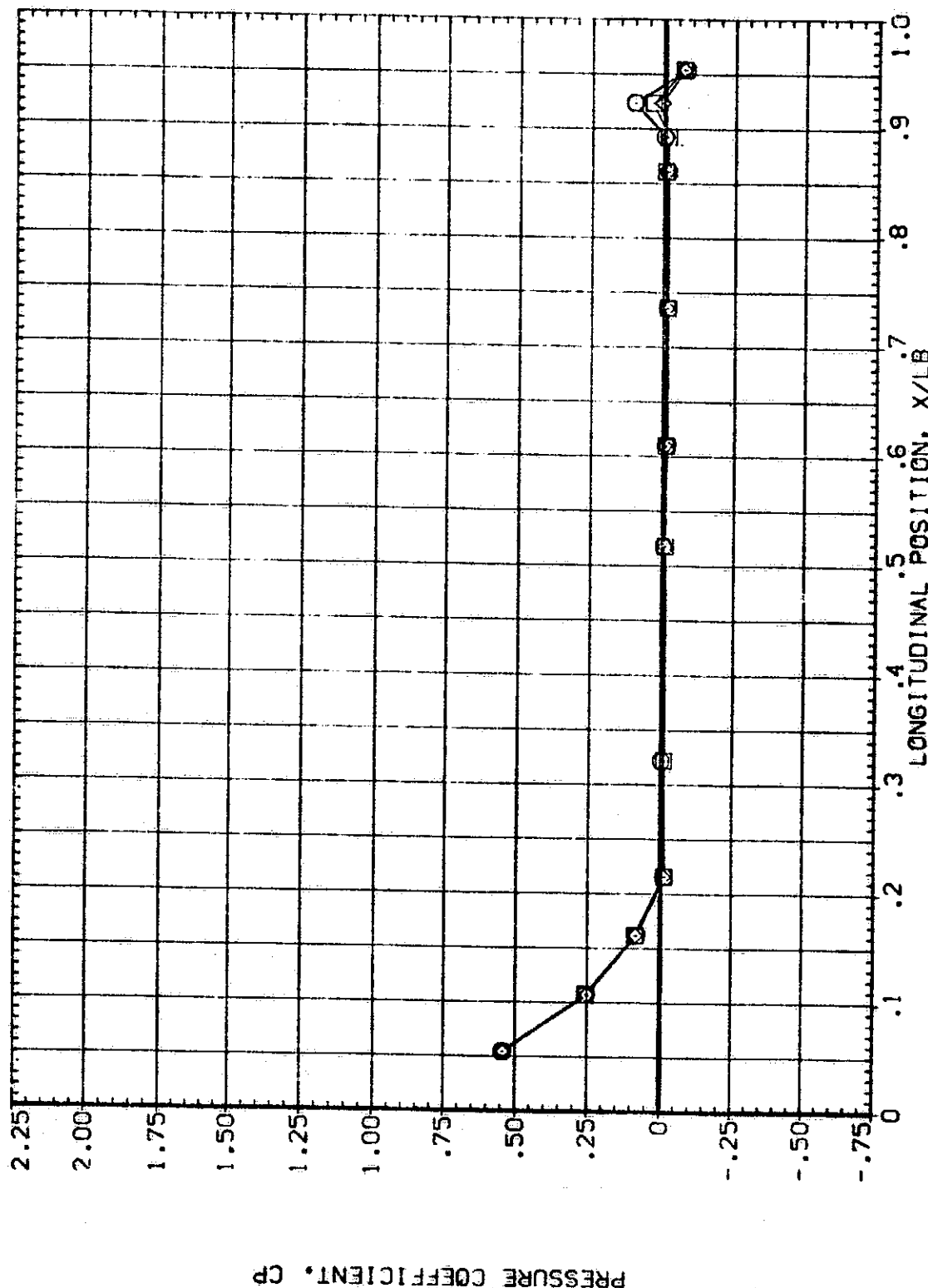


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A023)

SYMBOL  
□  
◇

THETA  
112.500  
135.000  
157.500

ALPHA  
-.280

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

.000  
135.000

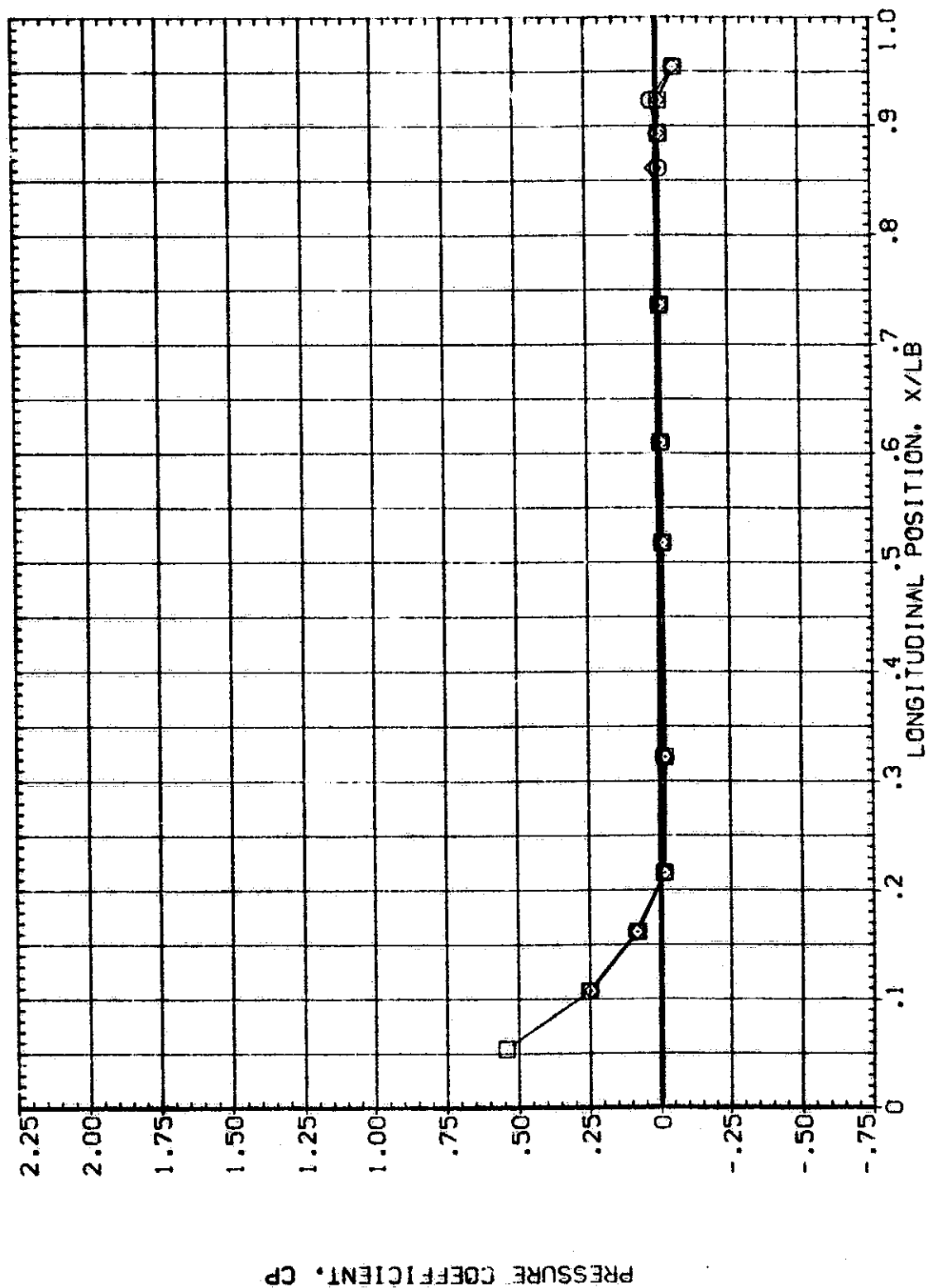


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A023)

SYMBOL

THETA  
180.000  
202.500  
225.000

ALPHA  
-280

MACH  
3.480

PARAMETRIC VALUES  
BETA .000  
MOUNT 1.000  
OFFSET .000  
PHI 135.000

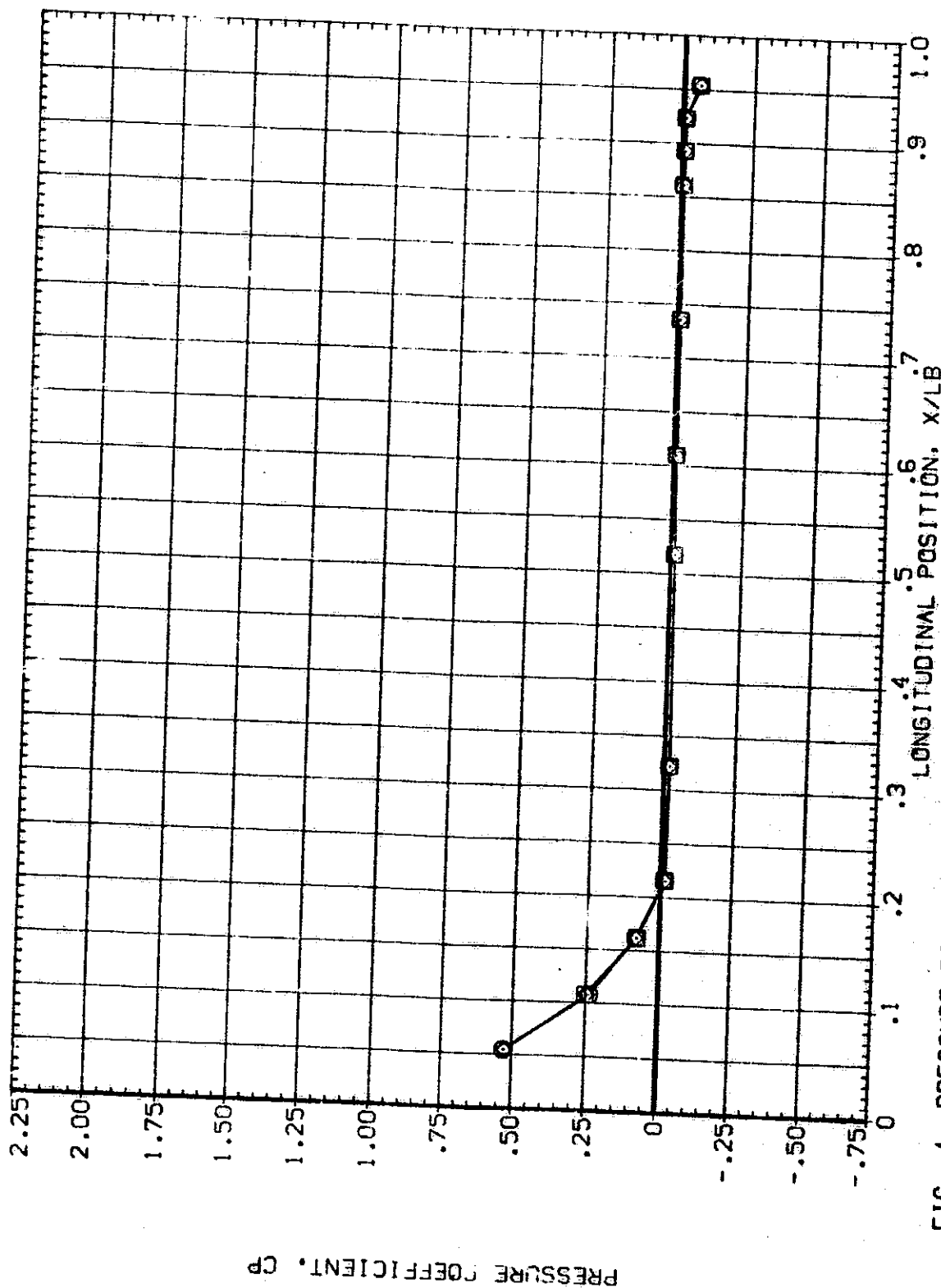


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (A-2F) MCR0200 EXTERNAL TANK, T1 (P1A023)

PARAMETRIC VALUES  
 BETA .000 OFFSET .000  
 MOUNT 1.000 PHI 135.000

SYMBOL THETA ALPHA MACH  
 247.500  
 270.000  
 292.500

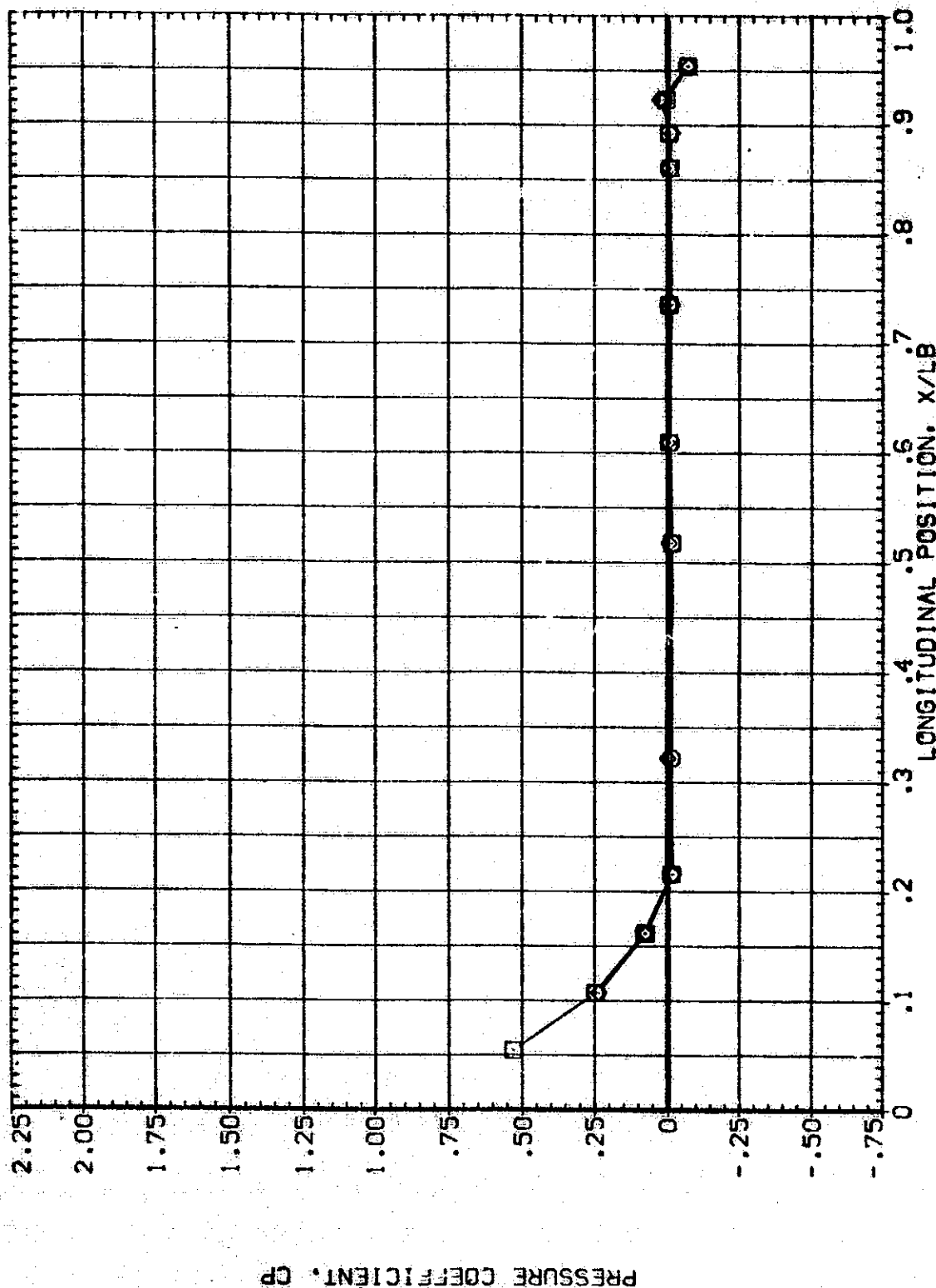


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA023)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	315.000	-.280	3.480	.000	.000	.000
□	326.000			1.000		135.000
◇	346.000					

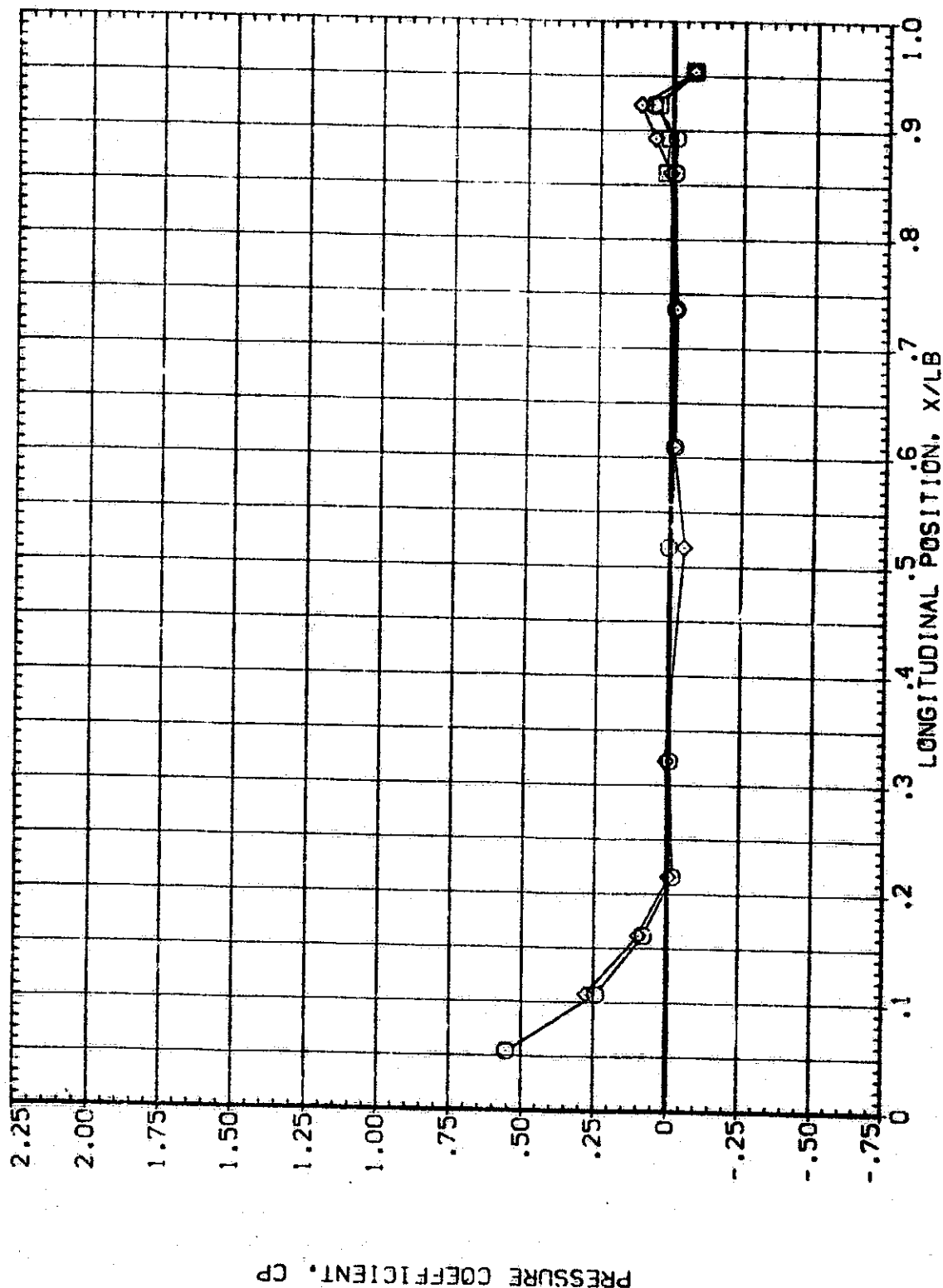


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

# MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (PIA024)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES		
	0.000	14.000	3.720	3.480	BETA	OFFSET	.000	PHI	.000
□	14.000				MOUNT	1.000			135.000
◇	24.000								

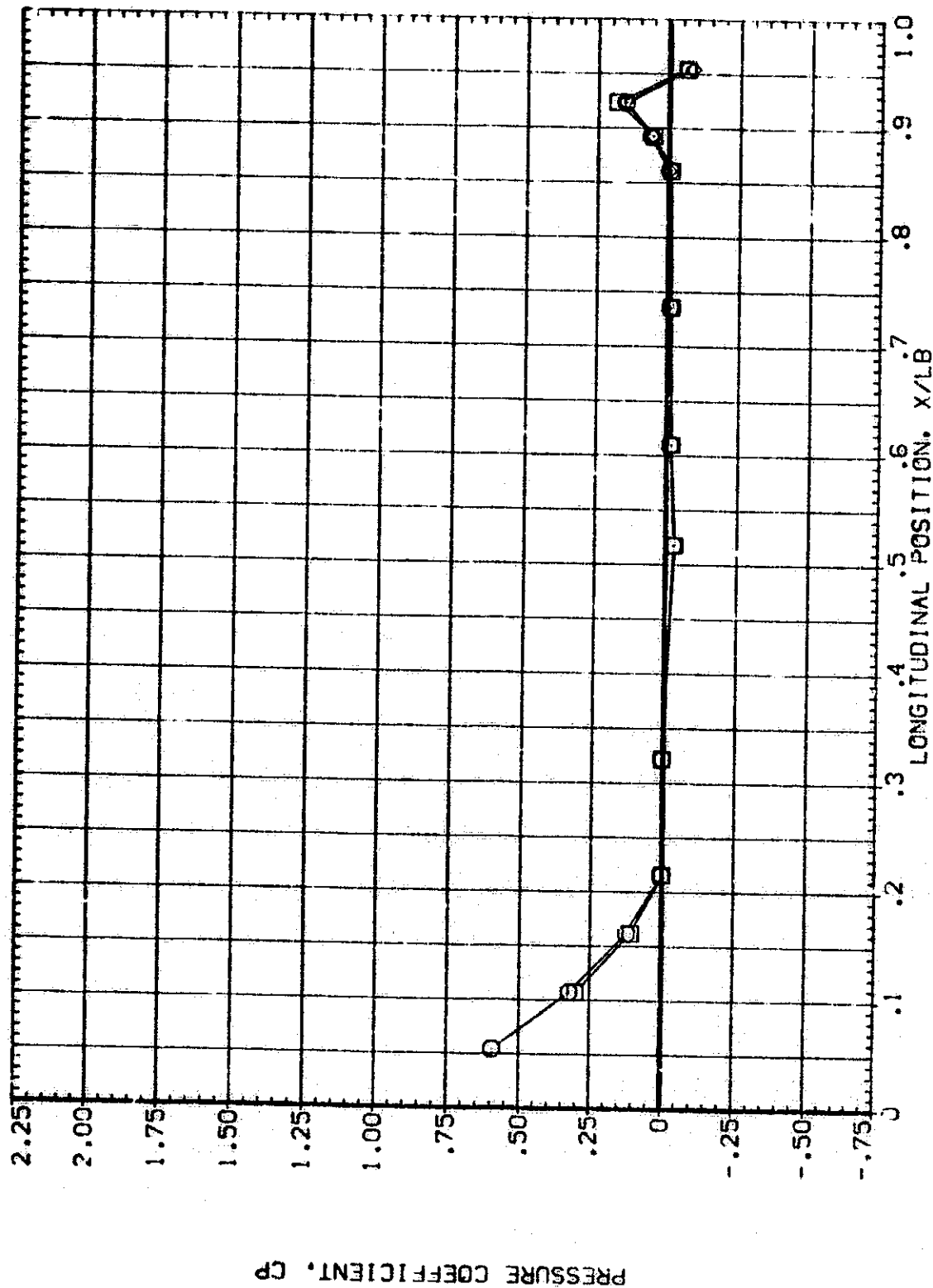


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA024)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 3.720

MACH  
 3.480

BETA  
 MIDUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 135.000

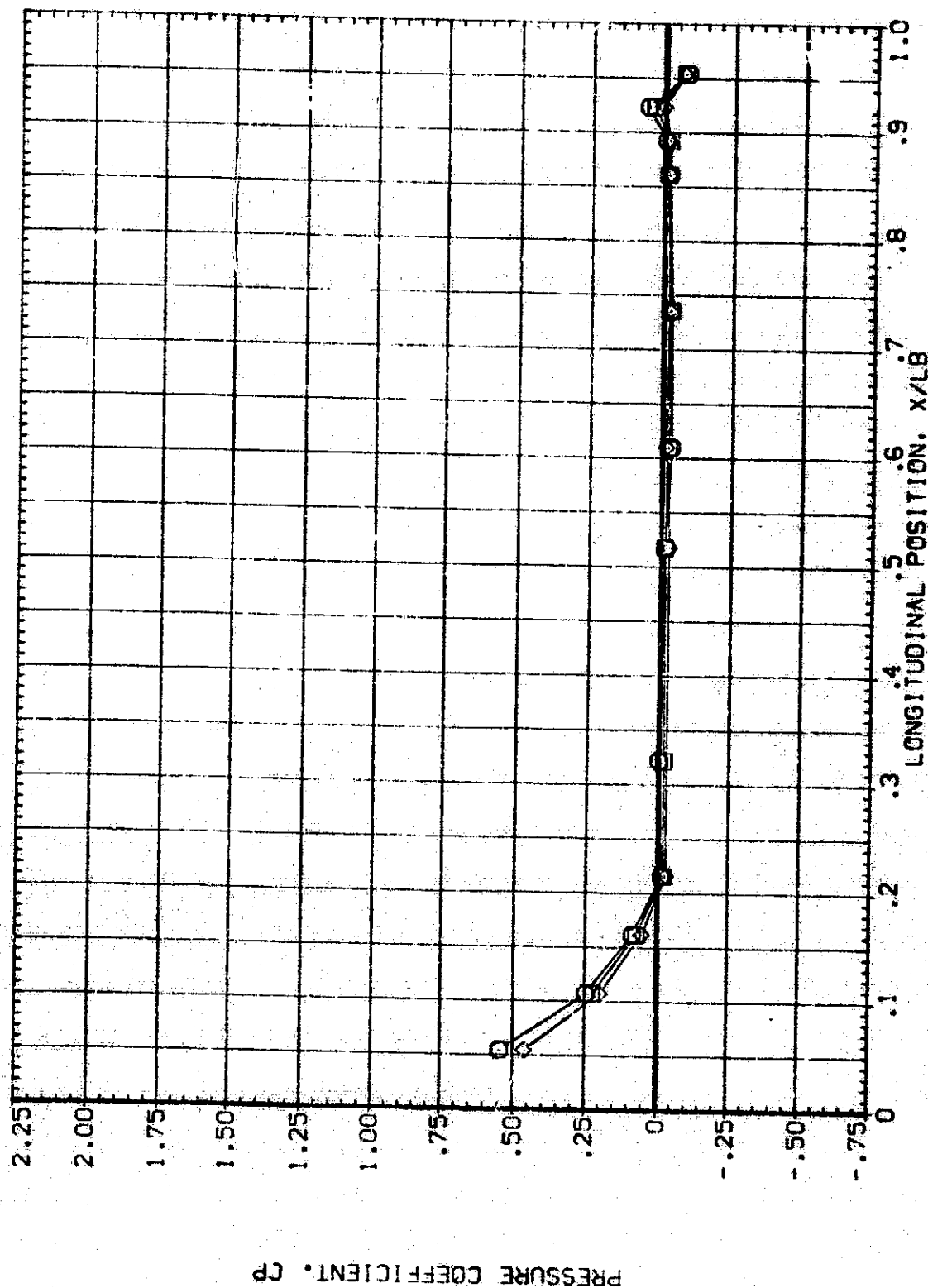


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T!

## Synopsi

**THE TA**

**ALPHA**

**WACH**

005-21

3.720

**3,490**

005-21

005-21

139

139

### PARAMETRIC VALUES

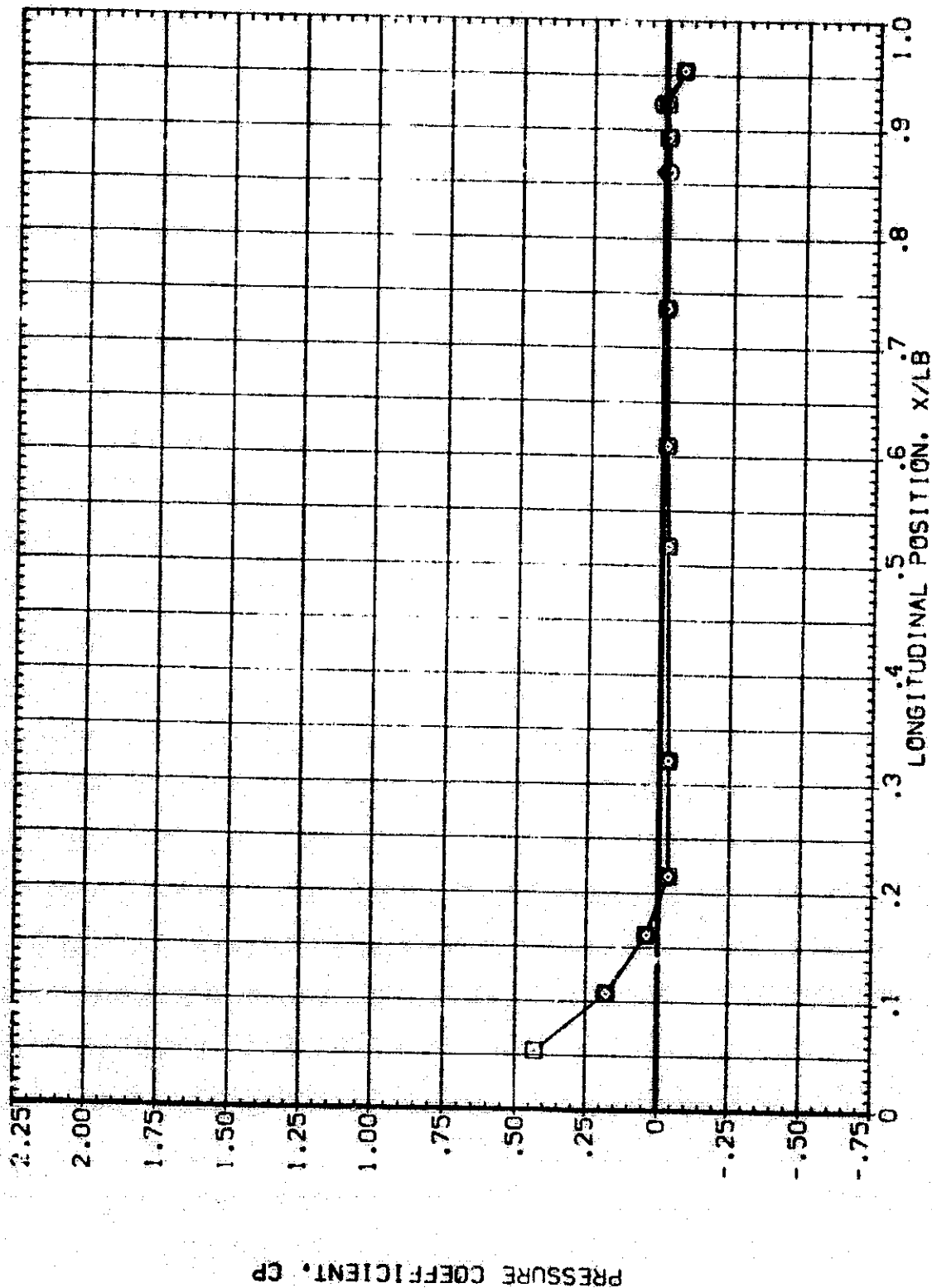
000.

000.



030.

030.



LONGITUDINAL POSITION. X/LB

FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL  
 ○  
 □  
 ◇

THETA  
 180.000  
 202.500  
 225.000

ALPHA  
 3.720  
 3.480

MACH  
 3.480

BETA  
 MDUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .030  
 135.000  
 P.11

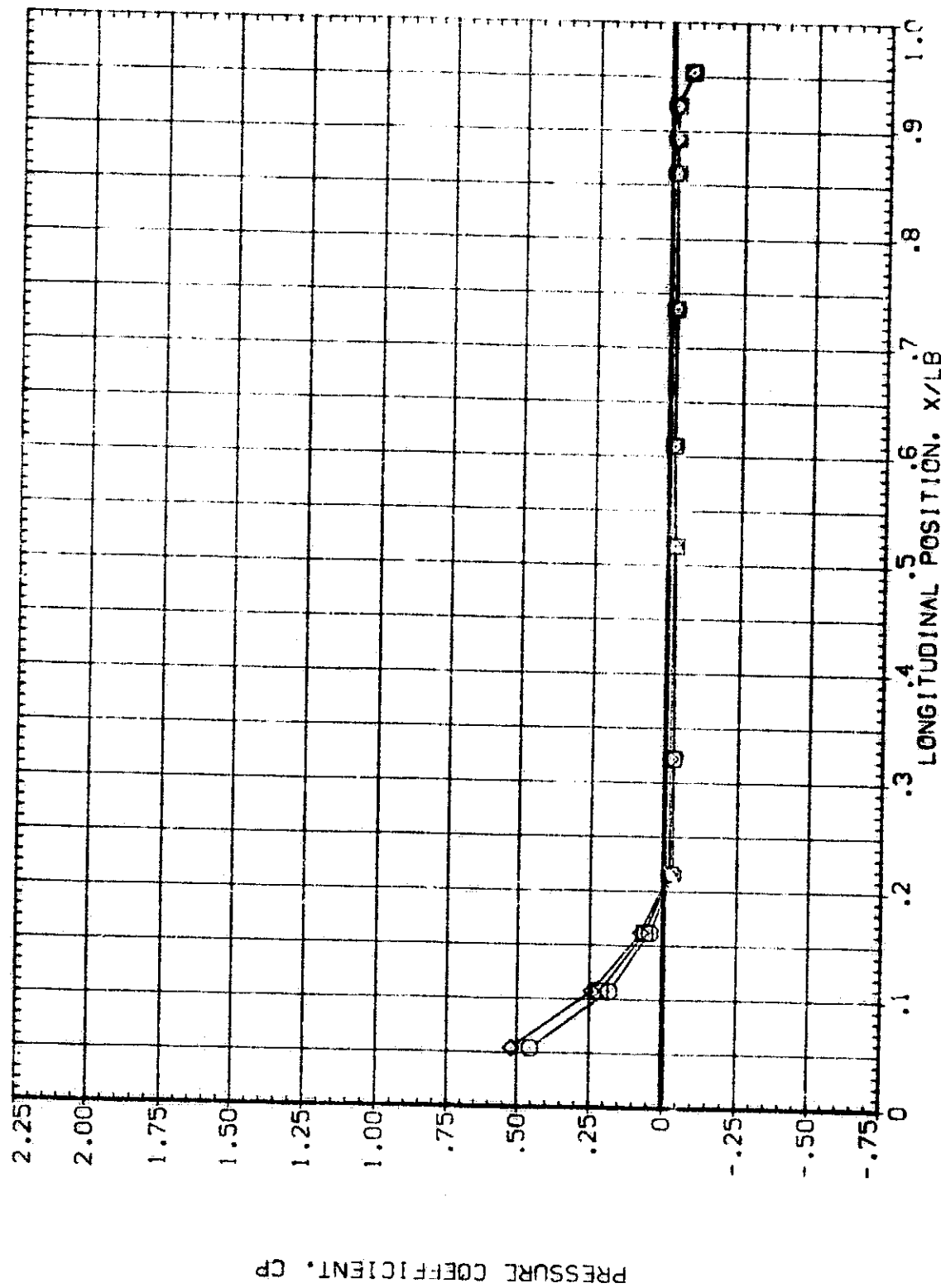


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA024)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	247.500	3.720	3.480	MOUNT	.000	.000
◇	270.000				1.000	135.000
◇	292.500					

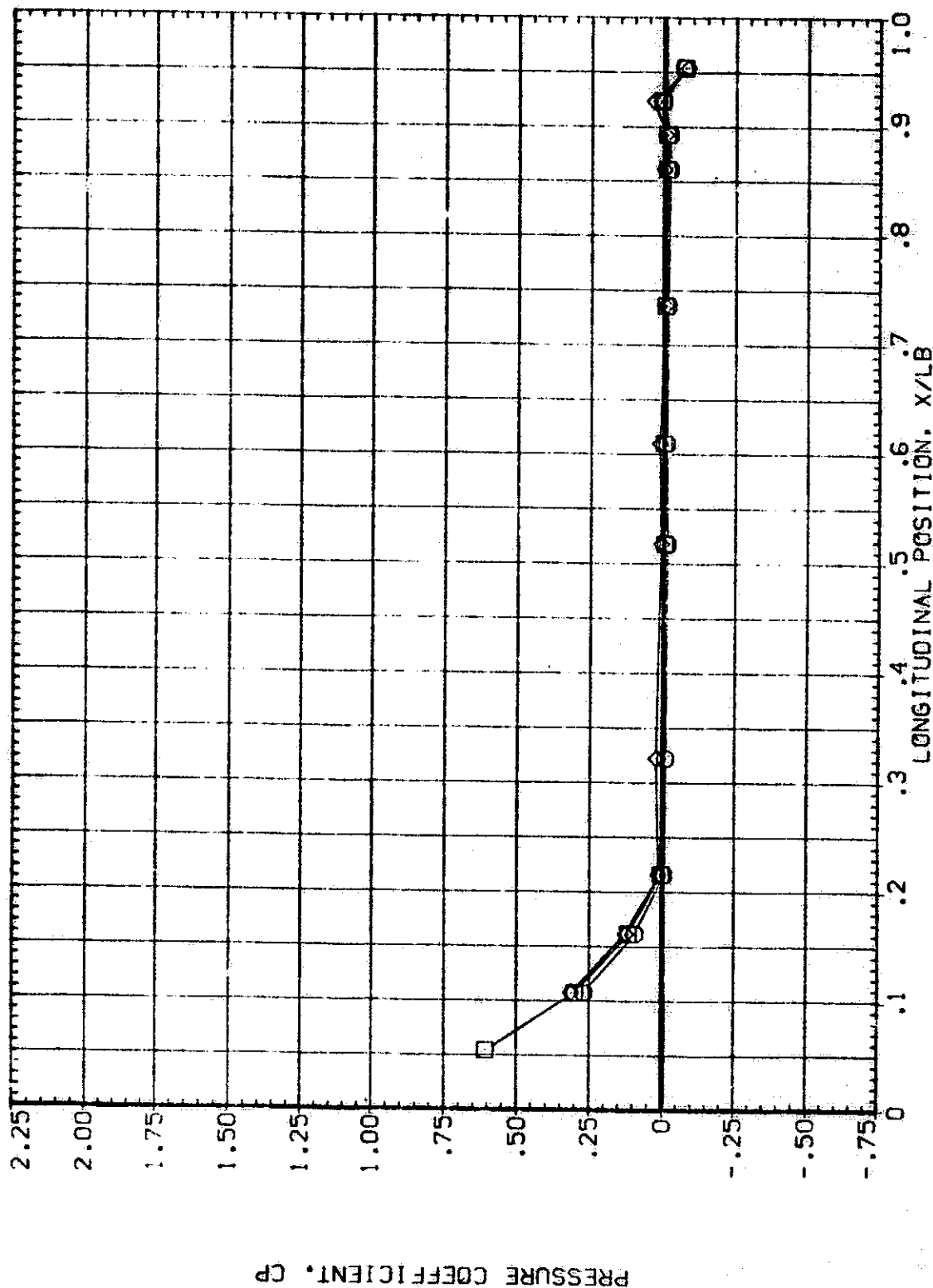


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
3.720  
MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT  
1.000  
PHI  
135.000  
OFFSET  
.000  
135.000

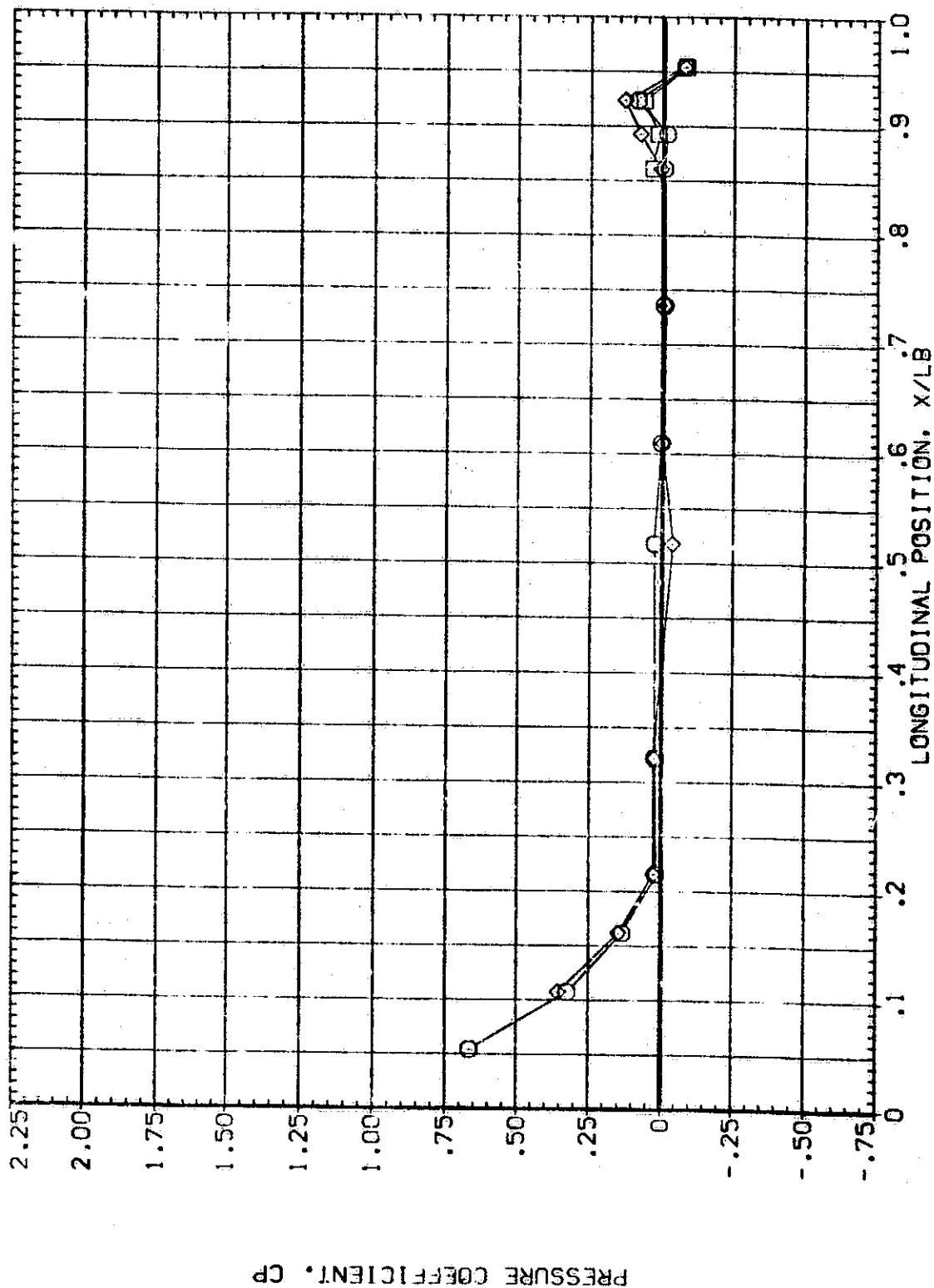


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A025)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 7.710

MACH  
 3.480

BETA  
 .000  
 1.000  
 1.35.000

PARAMETRIC VALUES  
 OFFSET  
 PH1

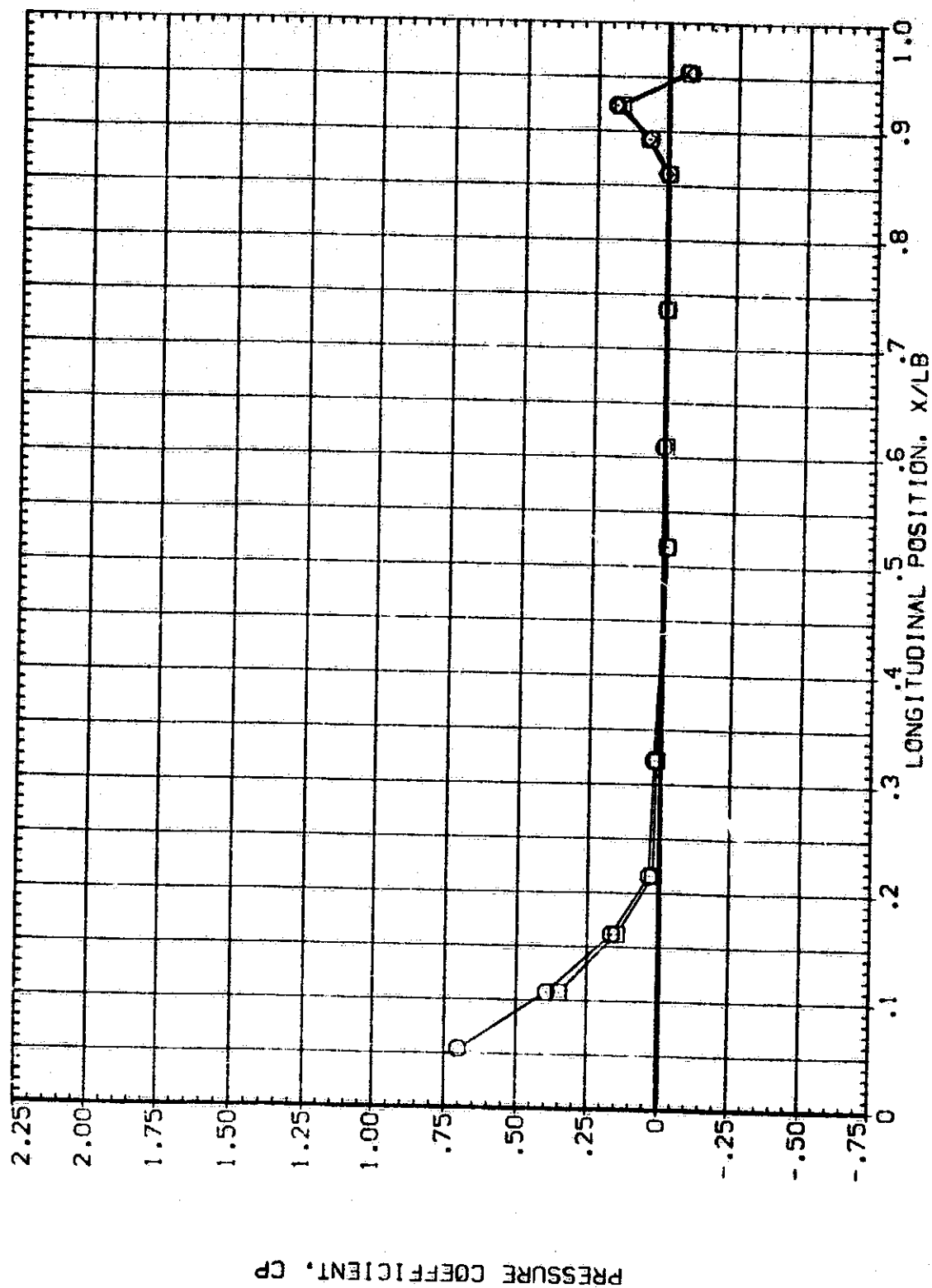


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA025)

SYMBOL  
○  
□  
◇

THETA 45.000  
67.500  
90.000  
ALPHA 7.710  
MACH 3.480

BETA  
MOUNT  
PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
.000  
135.000

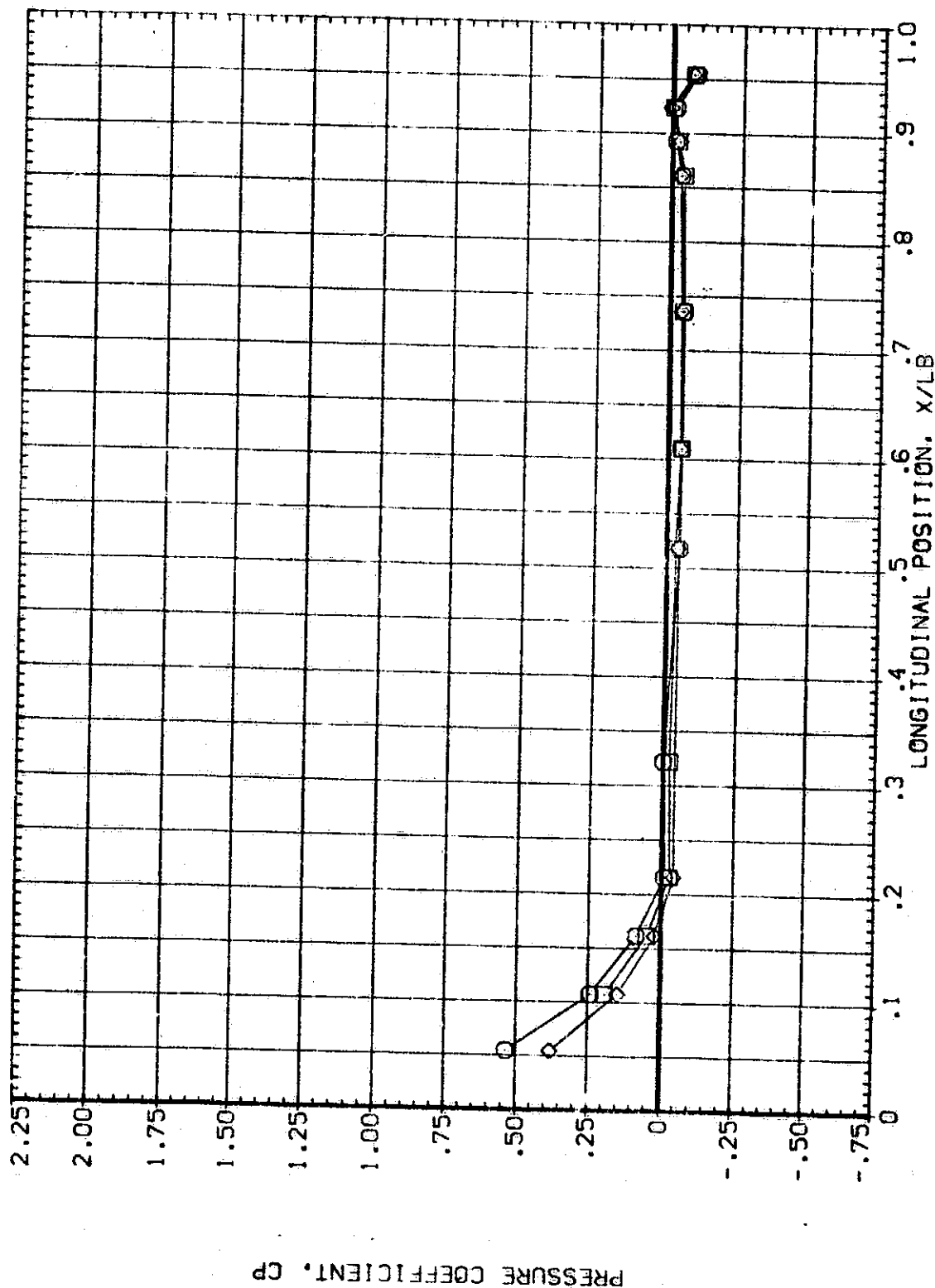


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A025)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	112.500	7.710	3.480	.000	.000	.000
◇	135.000			1.000		135.000
◇	157.500					

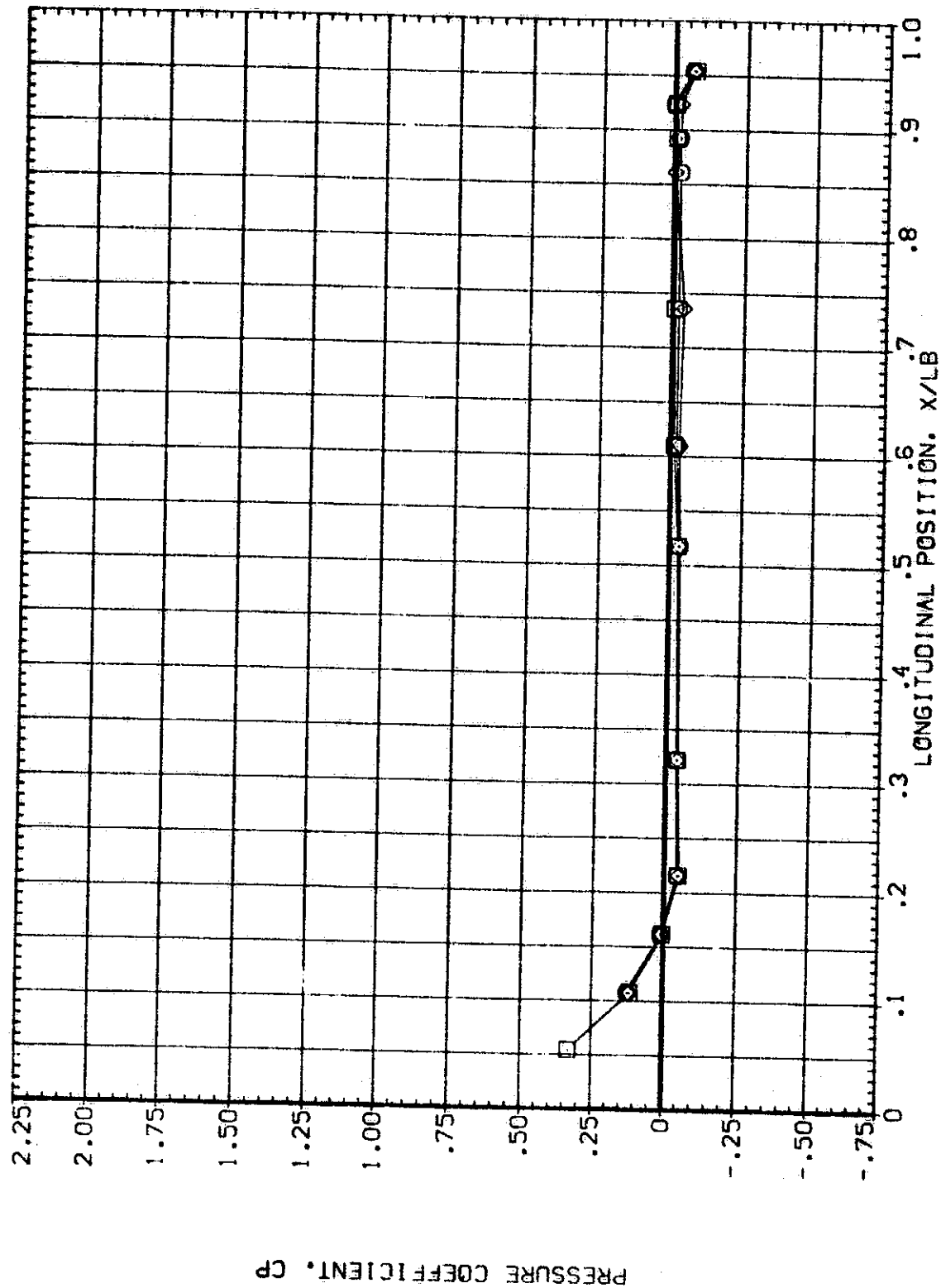


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA025)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	180.000	7.710	3.400	MDUNT	.000	.000
◇	222.500				1.000	135.000
◇	225.000					

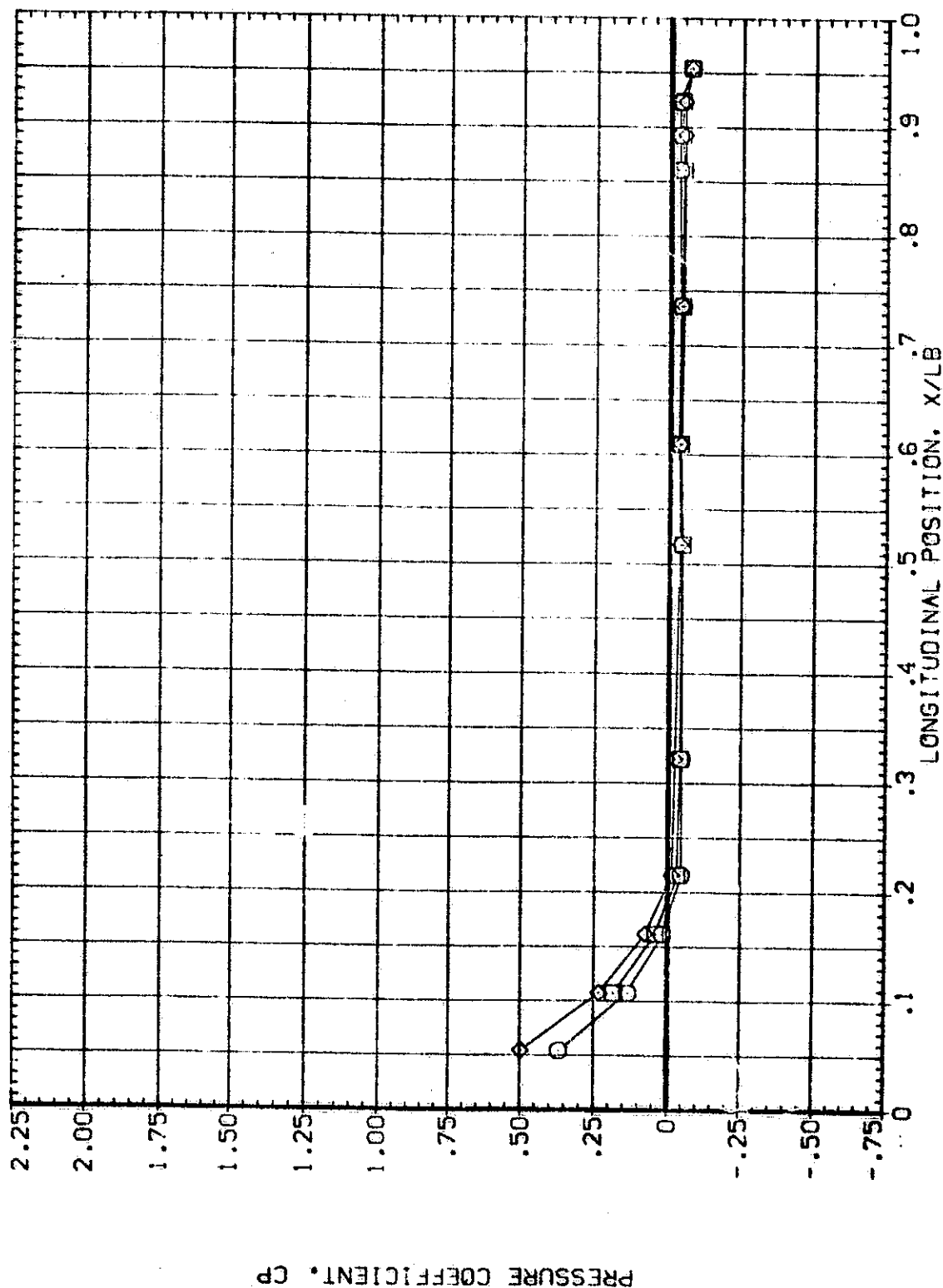


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1AD25)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	.000
□	247.500	7.710	3.480	1.000	PHI	135.000
◇	270.000					
◇	292.500					

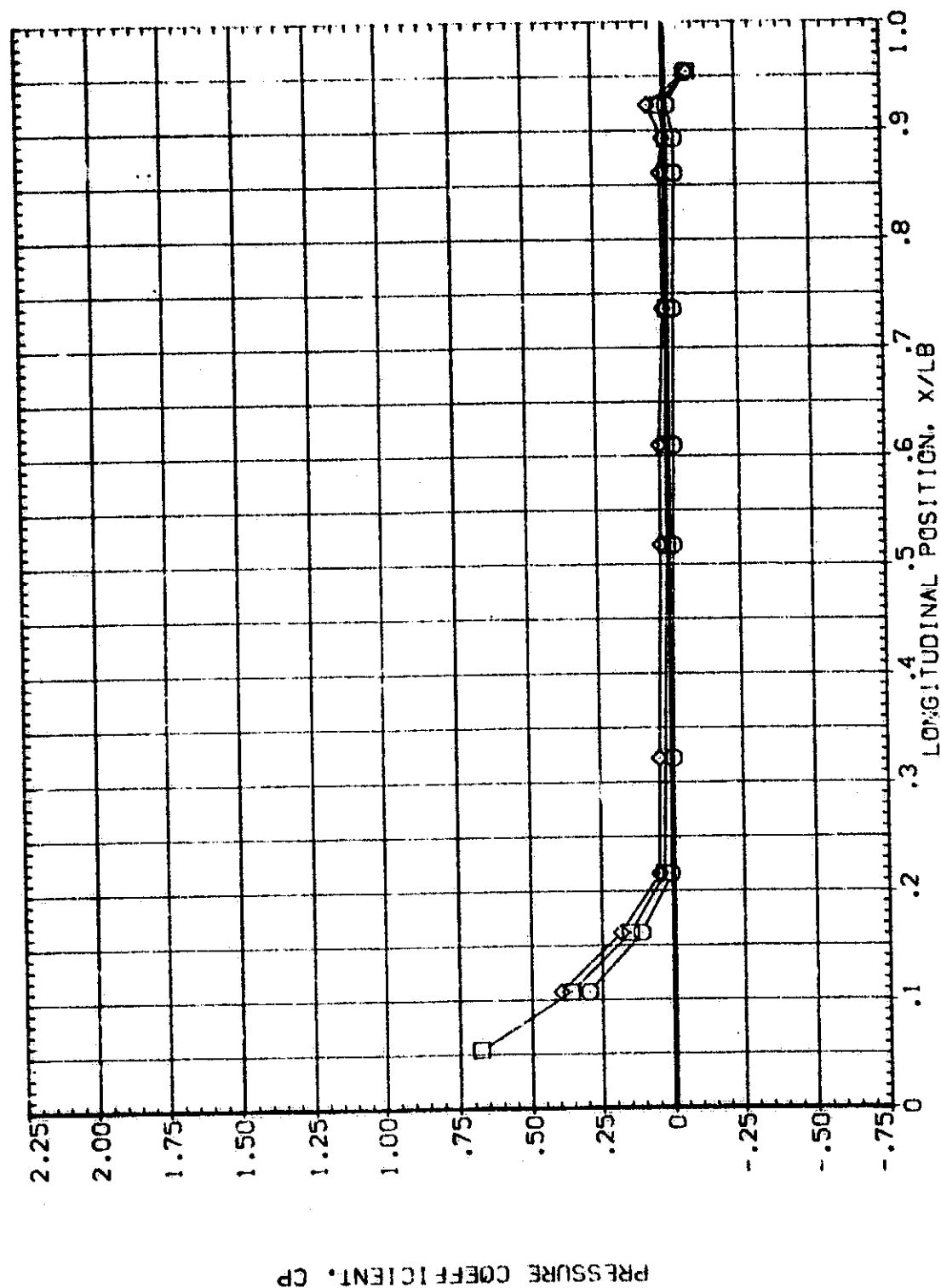


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA025)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	315.000	7.710	3.480	BETA	OFFSET	PHI	.000	.000	1.000	135.000
□	326.000			MMOUNT						
◇	346.000									

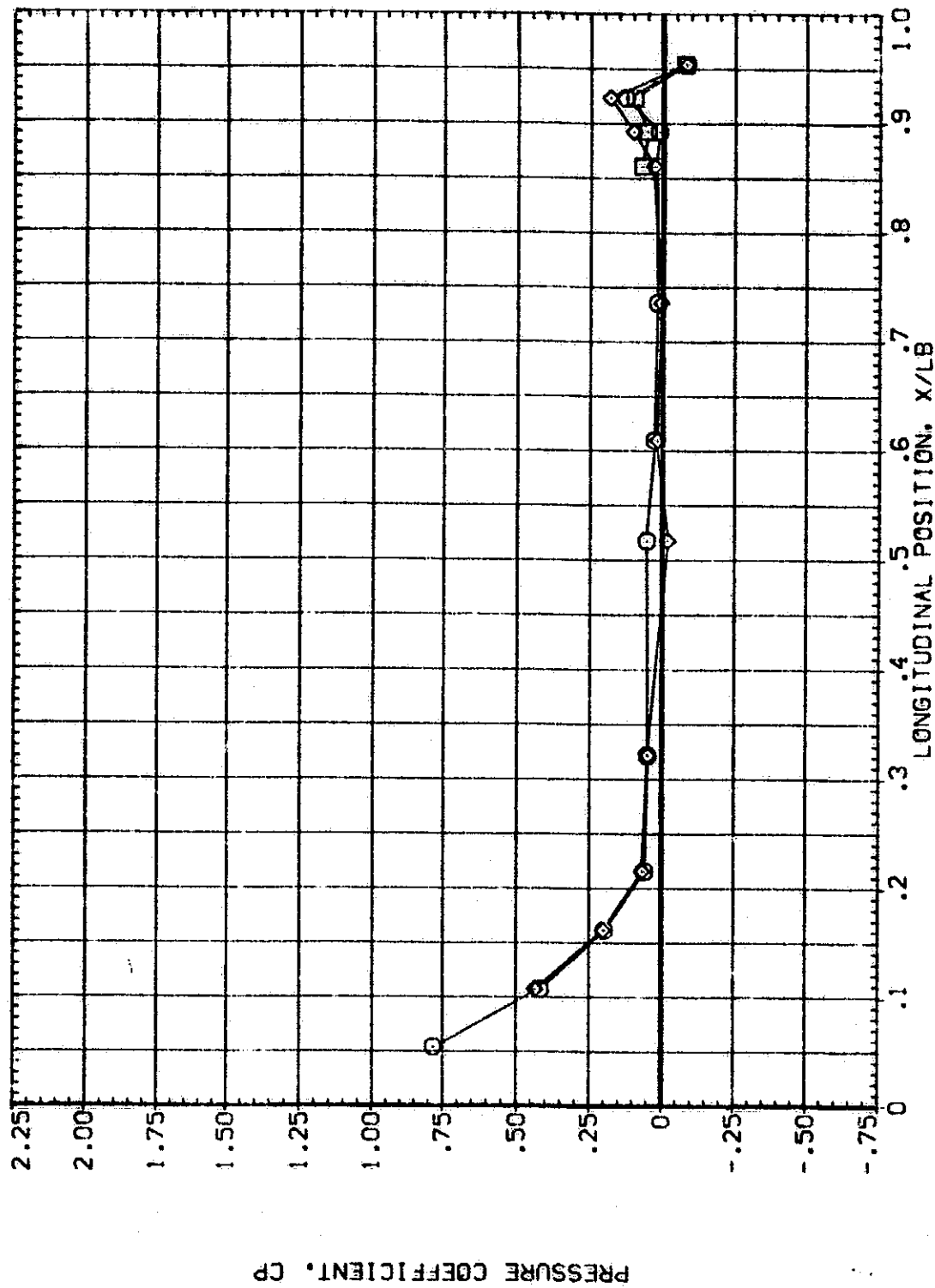


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A026)

SYMBOL  
 ◇  
 □  
 ○

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 12.520

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI  
 20.000  
 135.000

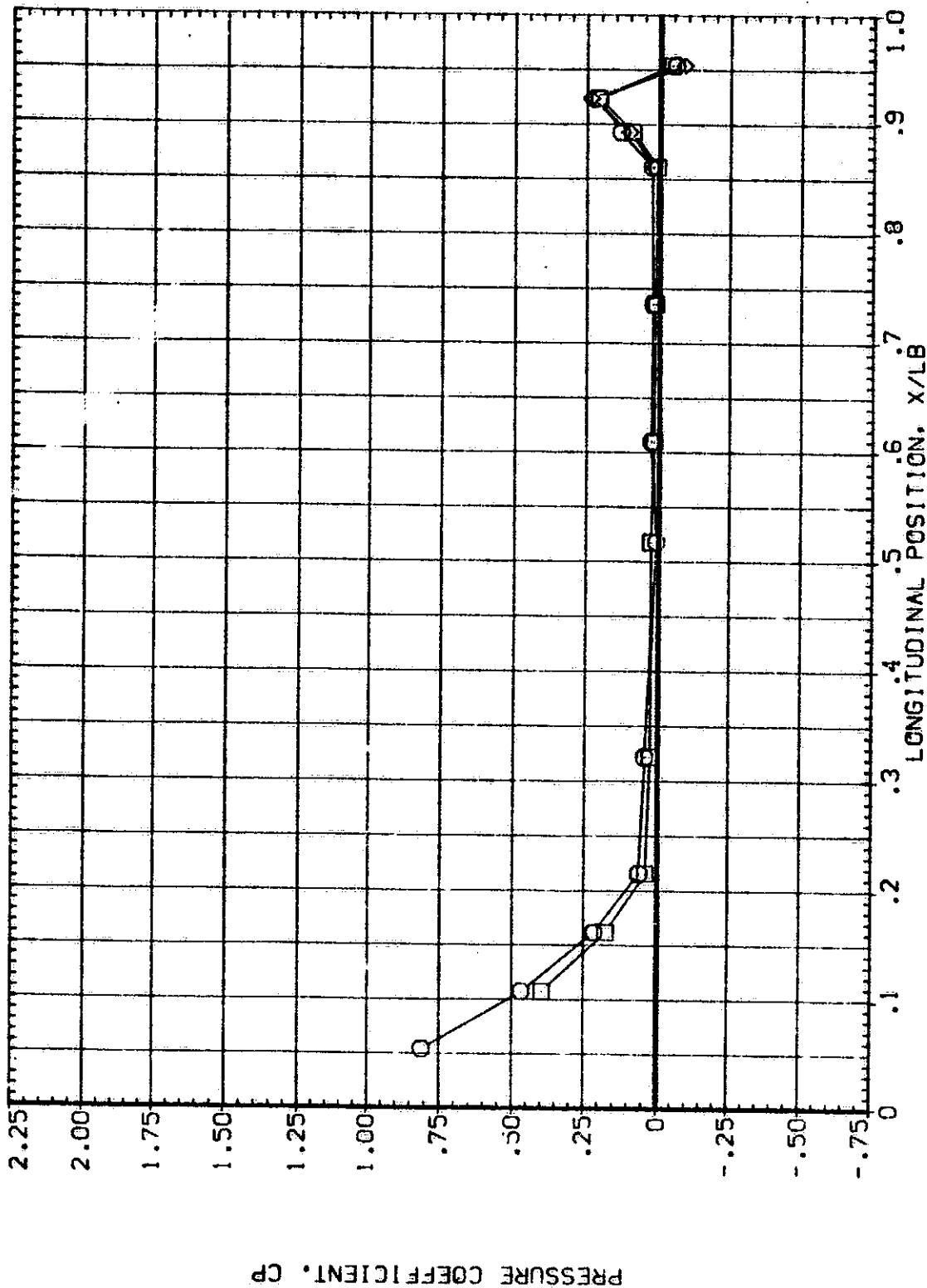


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○ □ ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 12.520

MACH  
 3.480

PARAMETRIC VALUES  
 .000 .000  
 BETA OFFSET  
 HOUNT PHI

20.000  
 135.000

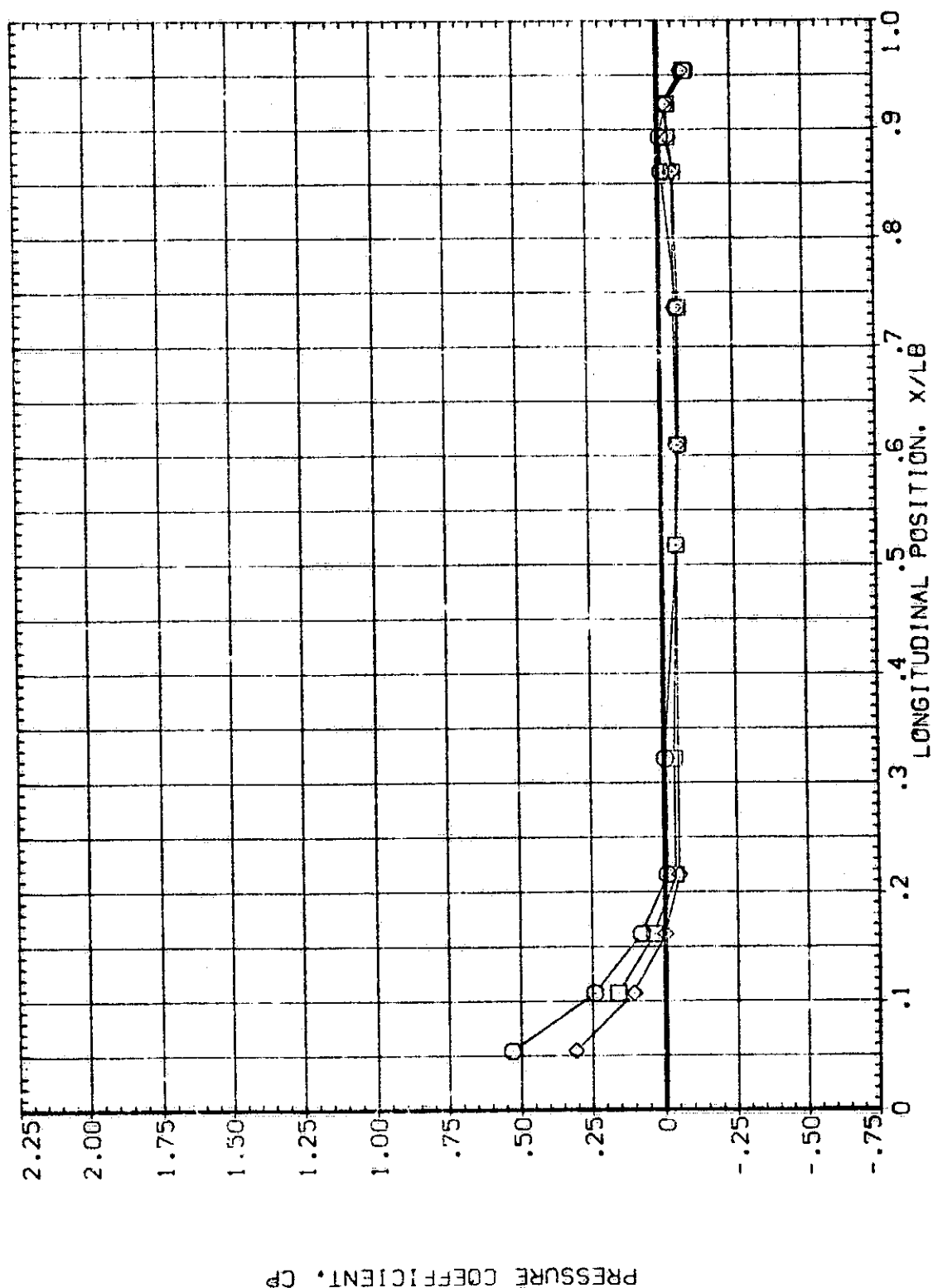


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A026)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES			
				BETA	.000' OFFSET	20.000	
○	112.500	12.520	3.480	MOUNT	1.000	PHI	135.000
□	135.000						
◇	157.500						

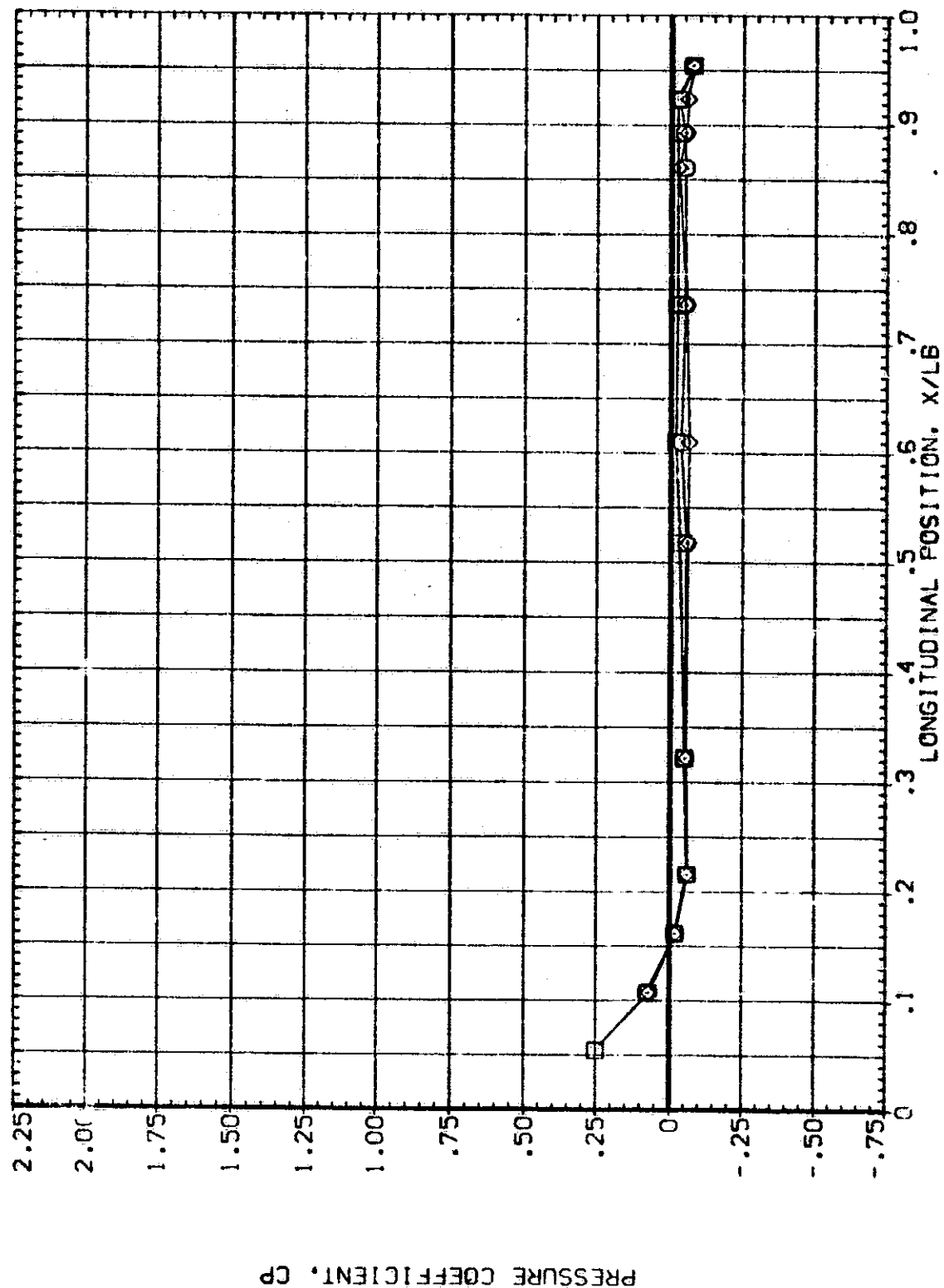


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A026)

SYMBOL

THETA  
180.000  
202.500  
225.000

ALPHA  
12.520  
MACH  
3.480

PARAMETRIC VALUES  
BETA  
HOUNT  
1.000  
1.000  
PHI  
20.000  
135.000

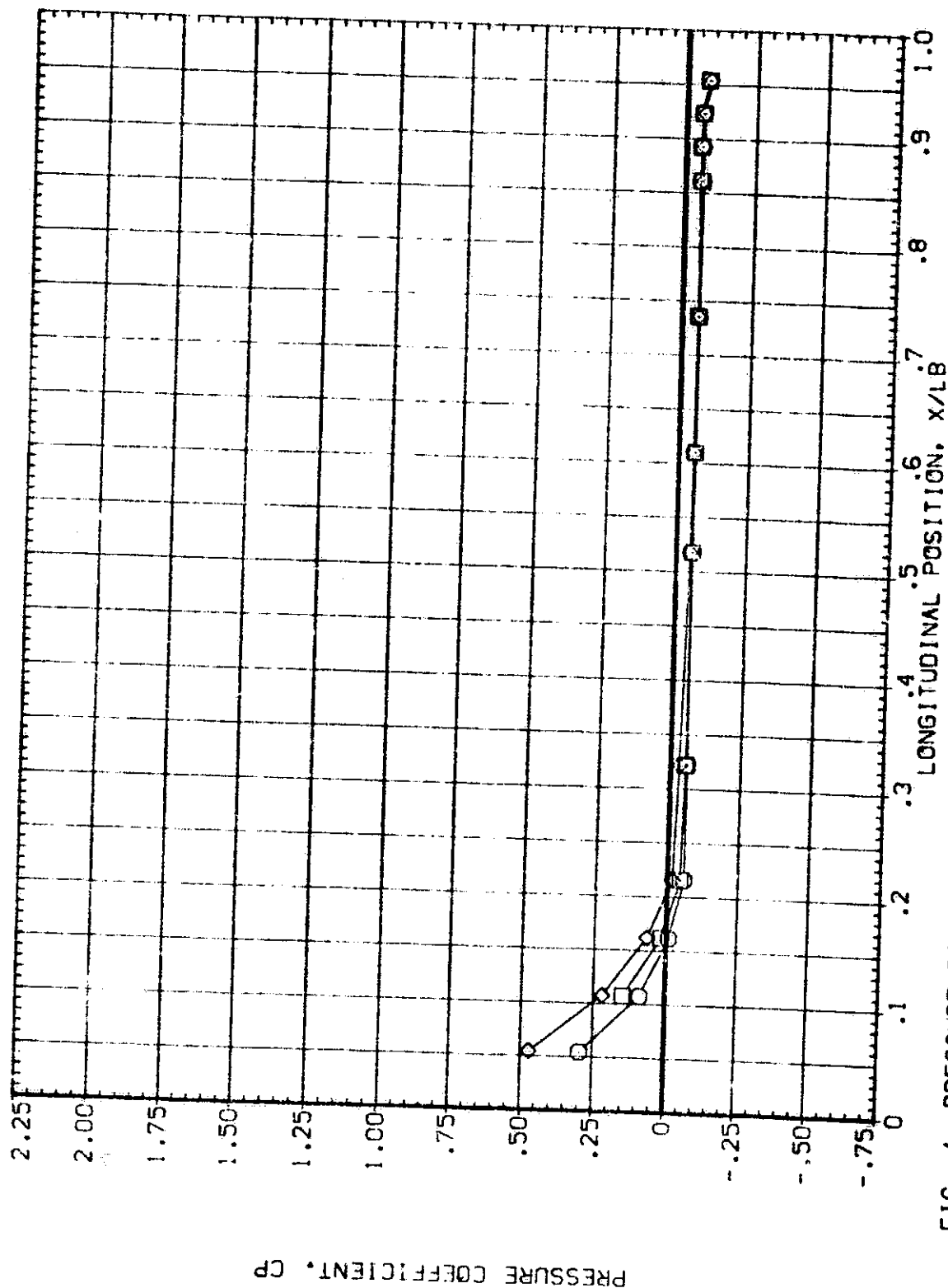


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA026)

SYMBOL  
○  
□  
◇

THETA  
247.500  
270.000  
292.500

ALPHA  
12.520

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI

20.000  
135.000

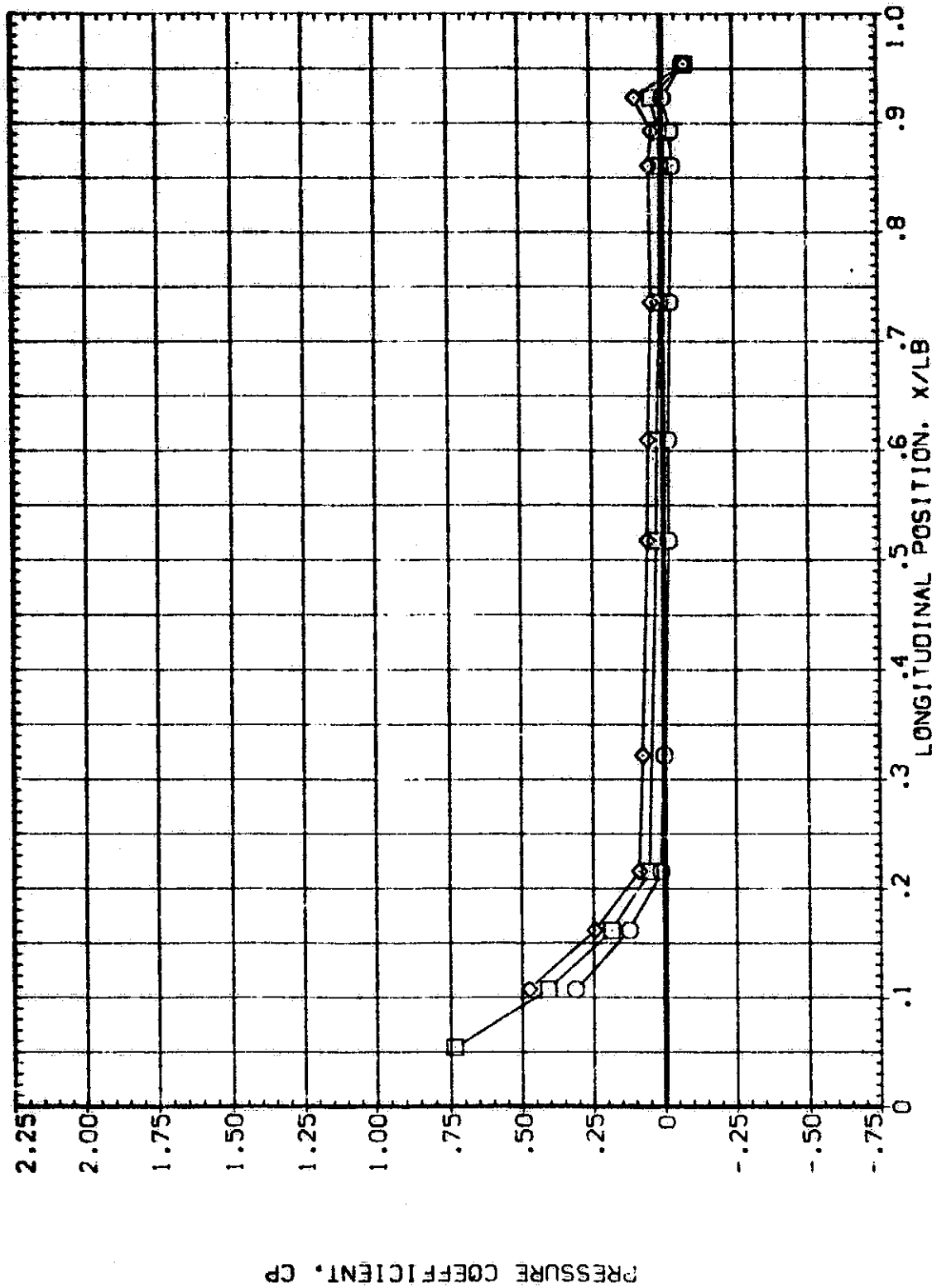


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA026)

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
12.520  
MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT  
1.000  
OFFSET  
20.000  
PWT  
135.000

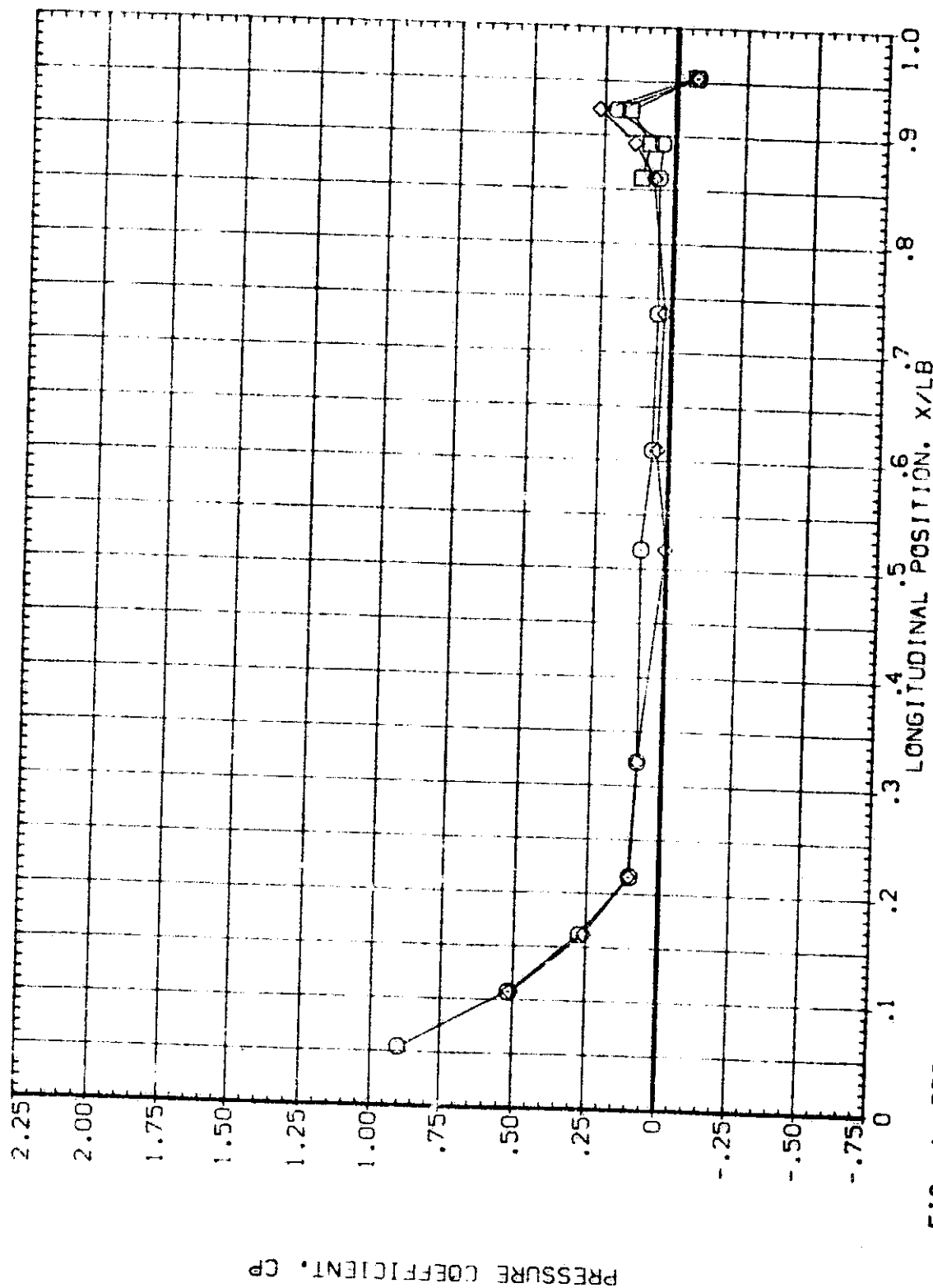


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A027)

SYMBOL  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 16.540

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 .000

20.000  
 135.000

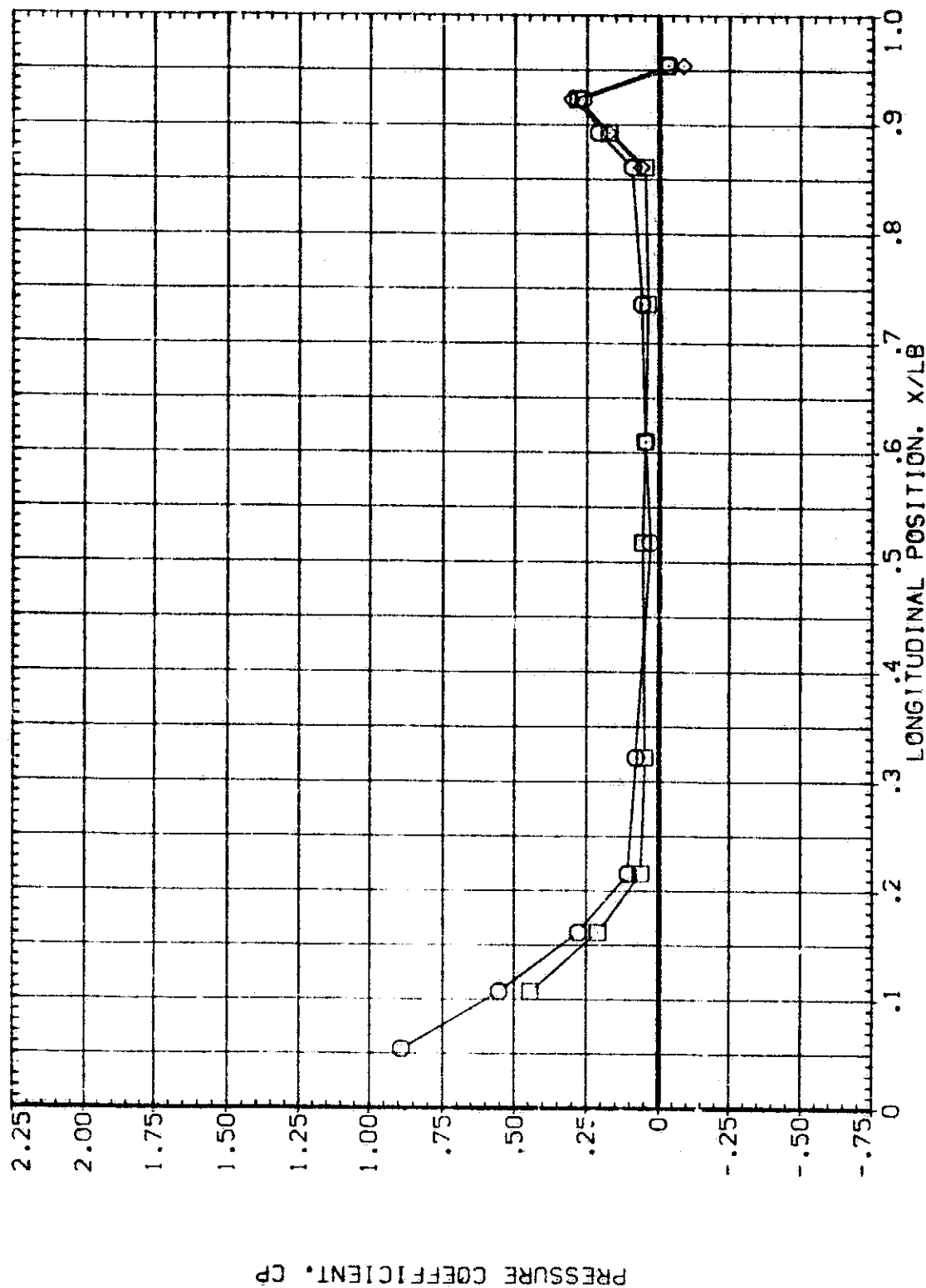


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA027)

SYMBOL  
 45.000  
 67.500  
 90.000

THETA  
 ALPHA 16.540  
 MACH 3.480

PARAMETRIC VALUES  
 BETA .000  
 HOUNT 1.000  
 OFFSET 20.000  
 PHI 135.000

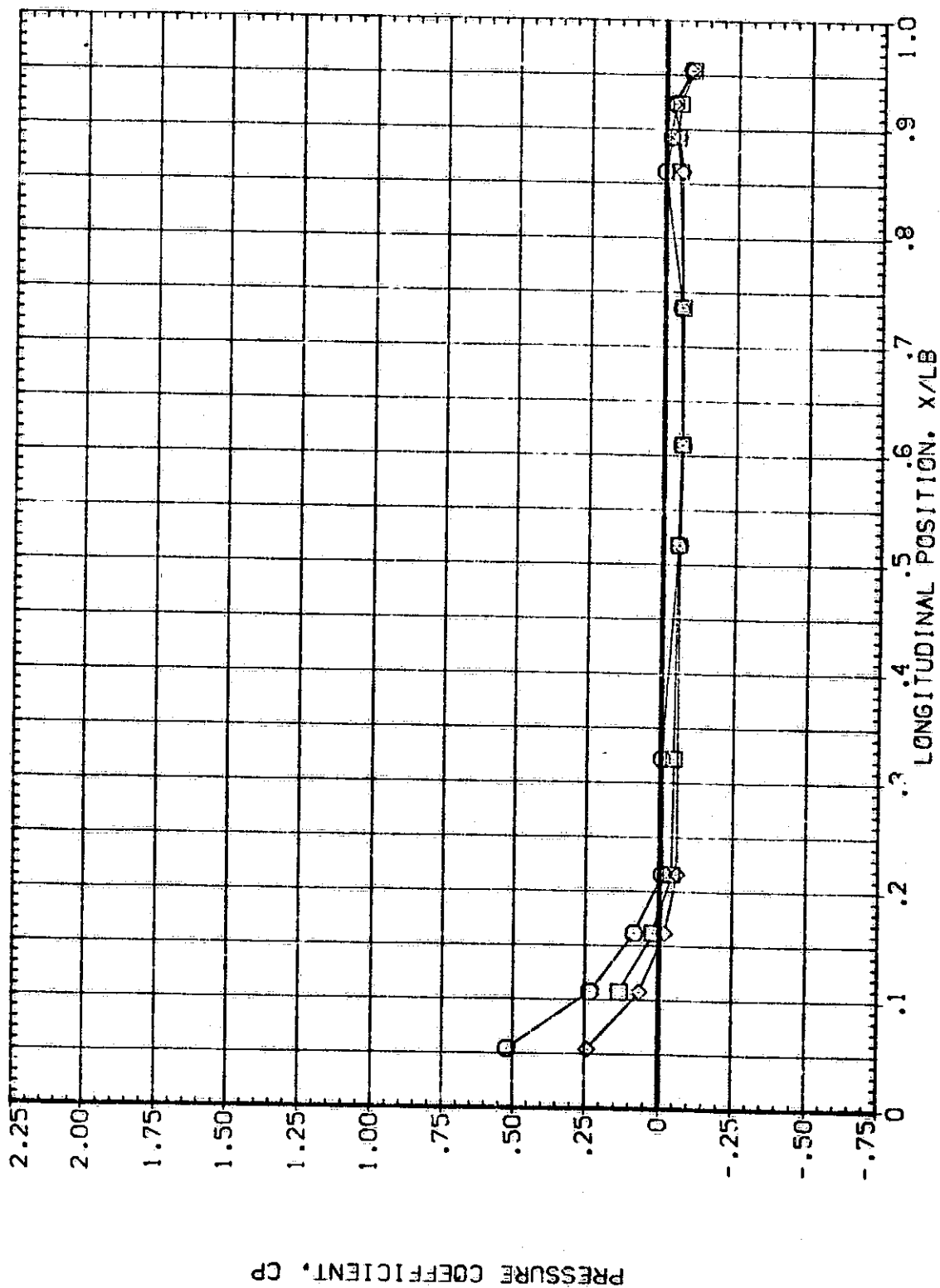


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA027)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 16.540

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI

20.000  
 135.000

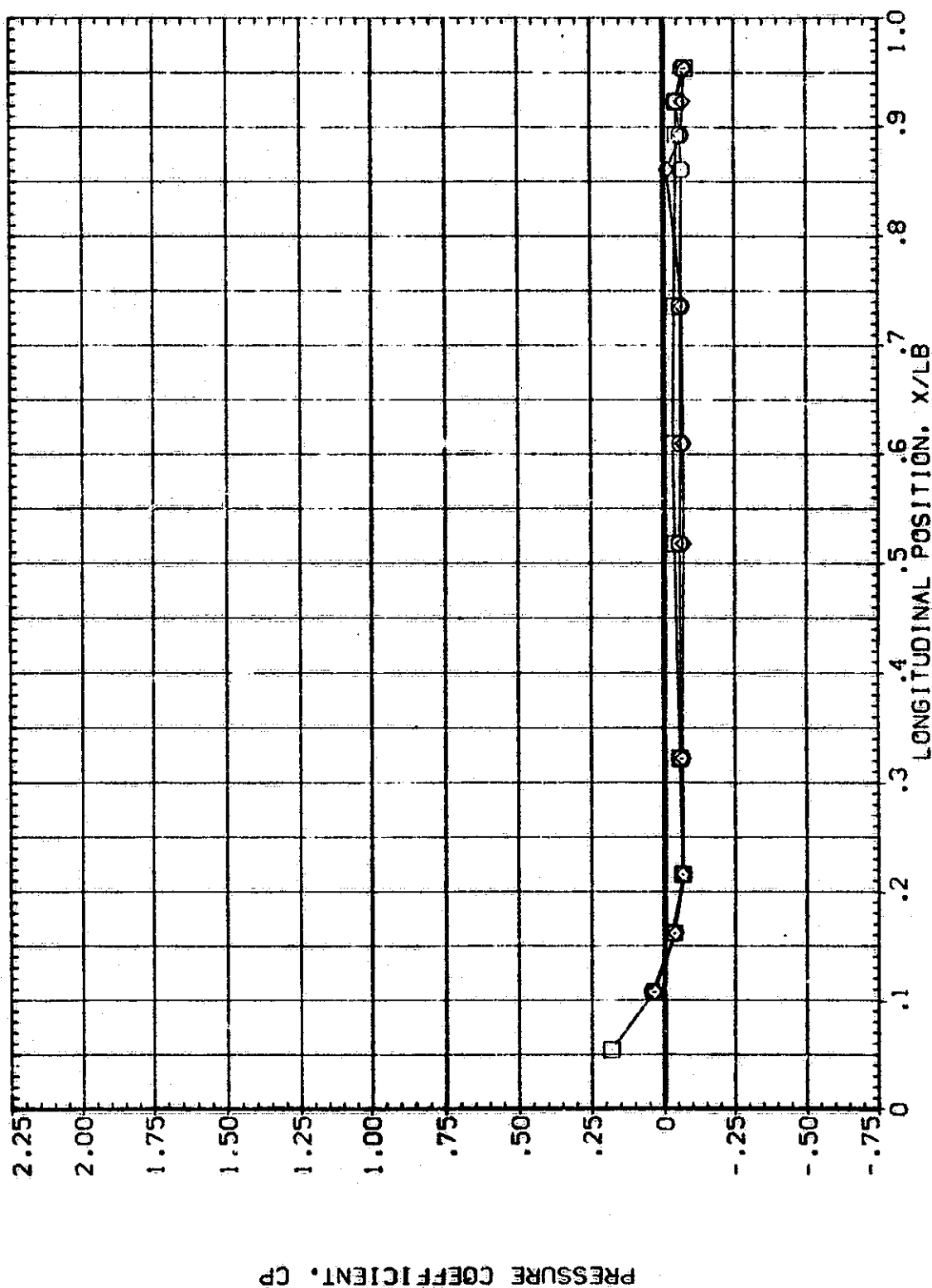


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 ○ 180.000  
 □ 202.500  
 ◇ 225.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 135.000

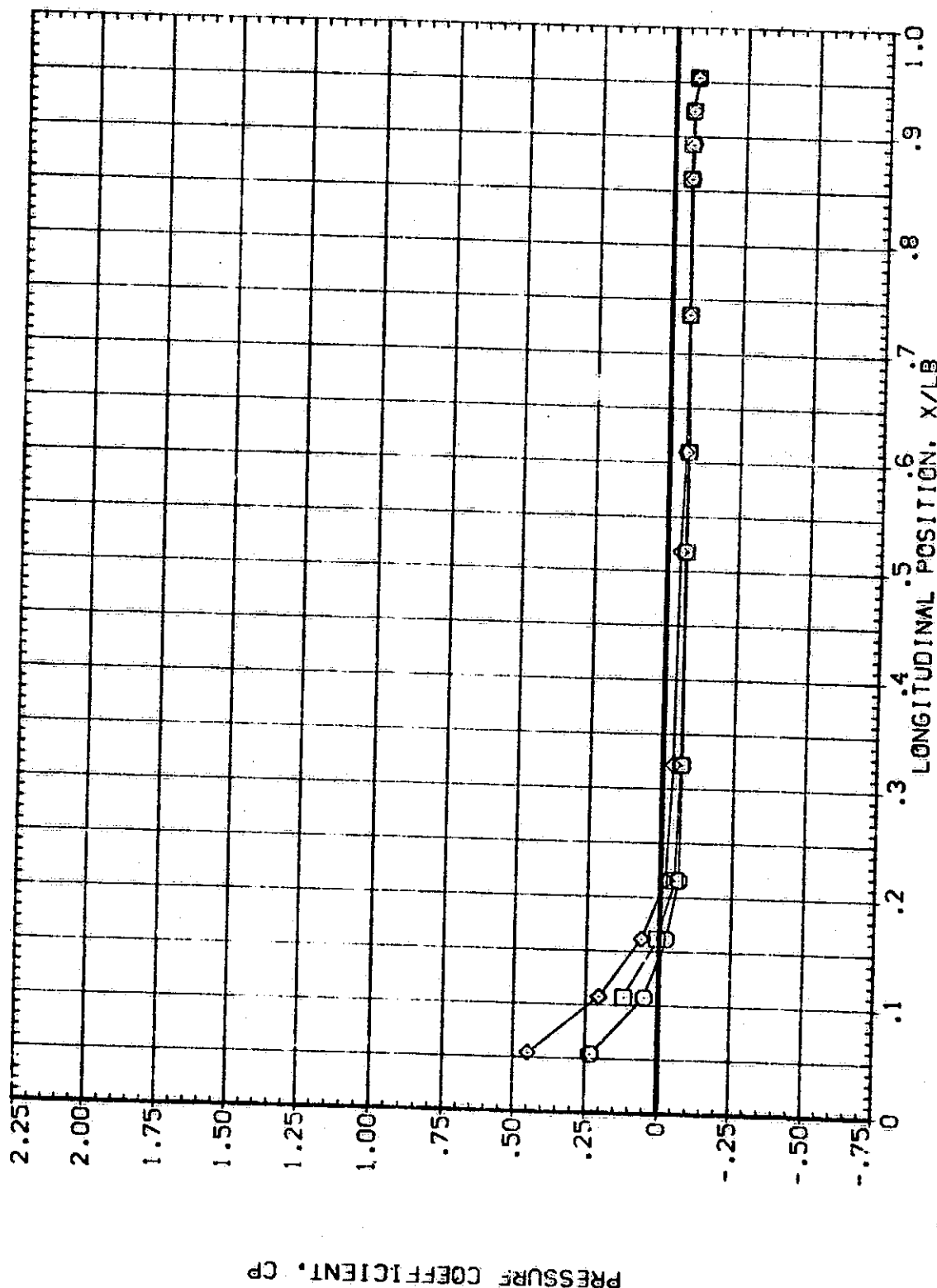


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A027)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 247.500  
 270.000  
 292.500

ALPHA  
 16.540

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 OFFSET  
 1.000 PHI  
 20.000  
 135.000

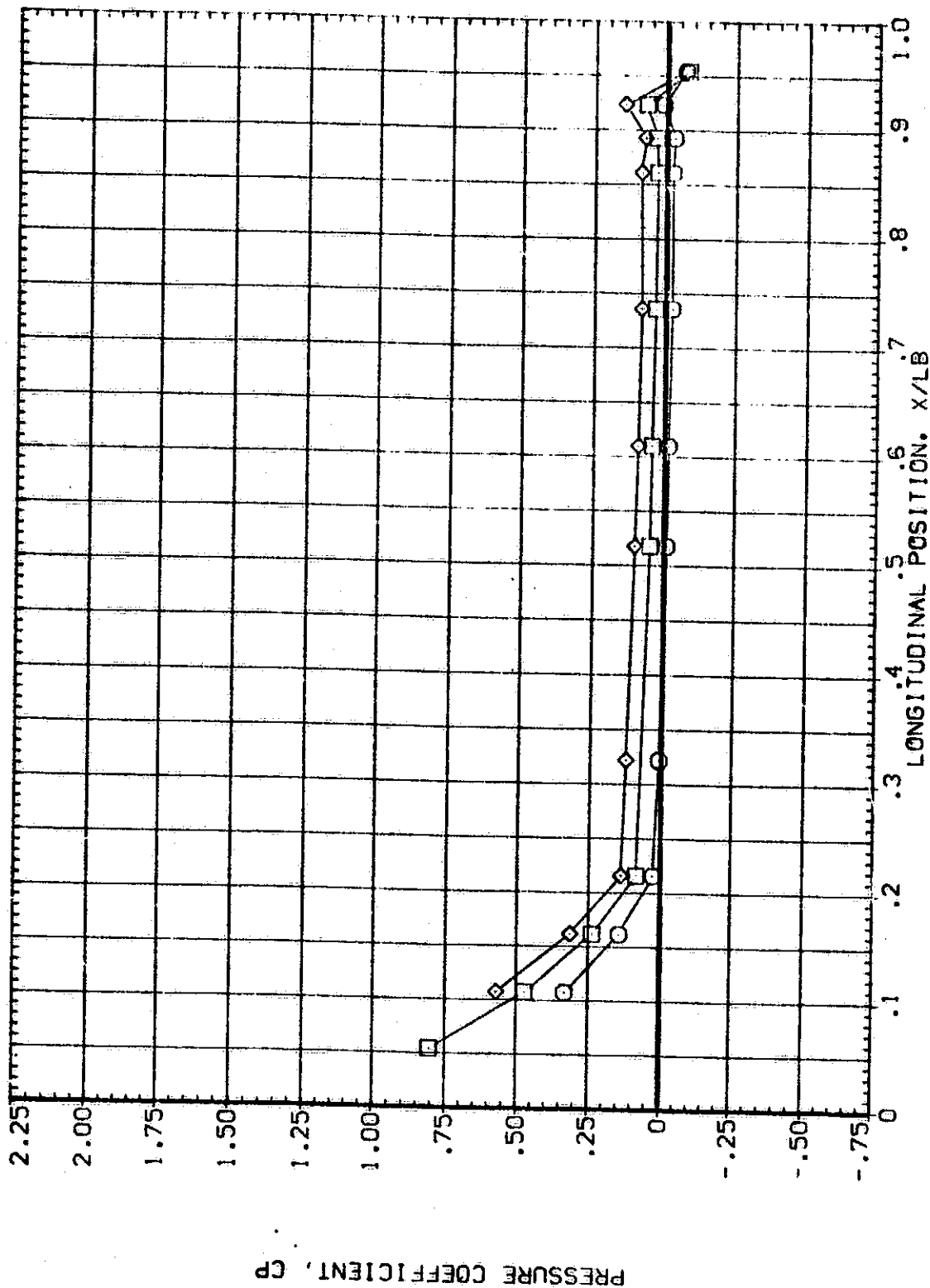


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A027)

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
16.540

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI

20.000  
135.000

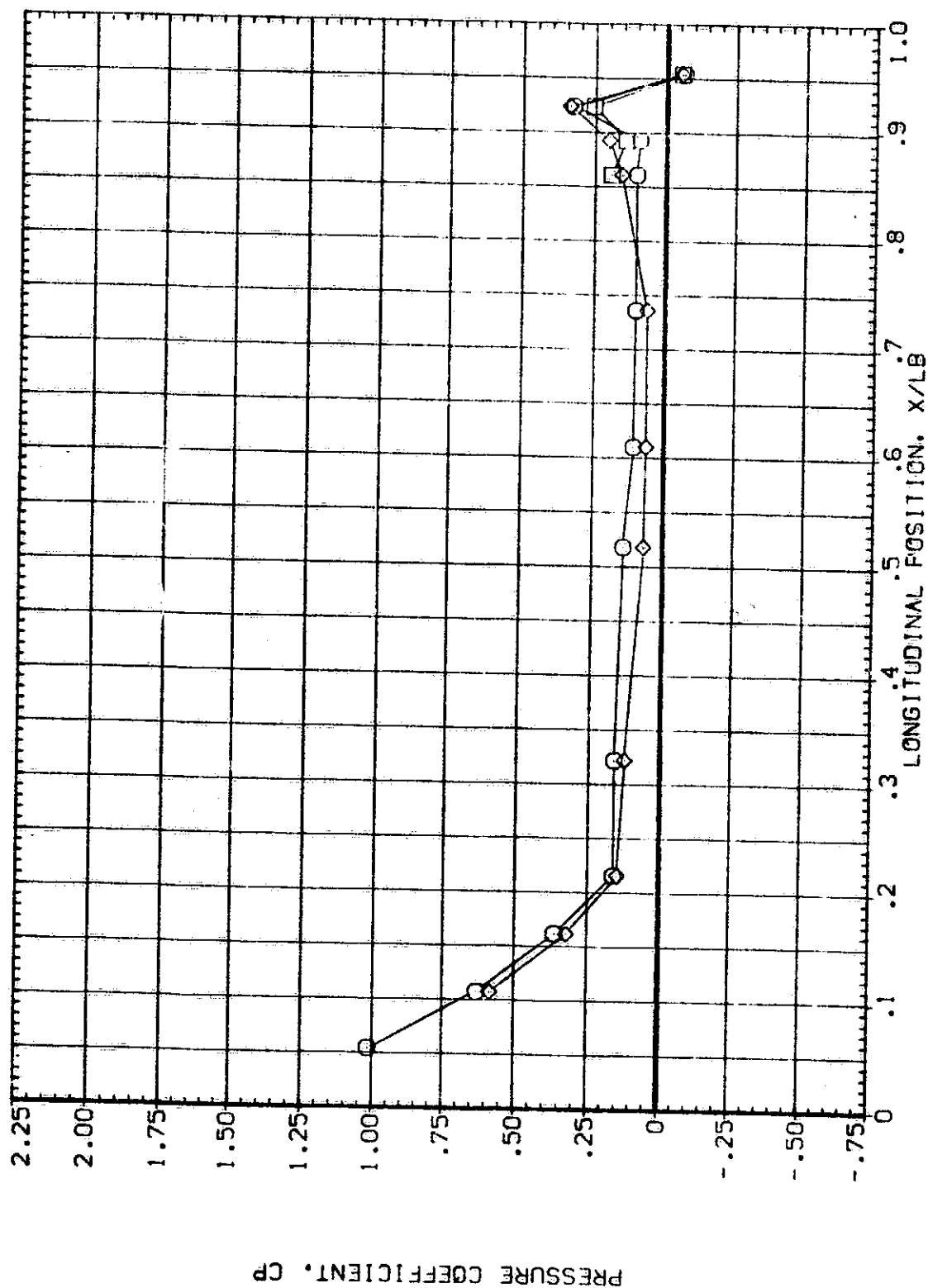


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(PIA028)

SYMBOL  
□  
◇

THETA  
.000  
14.000  
24.000

ALPHA  
20.610

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
F41

20.000  
35.000

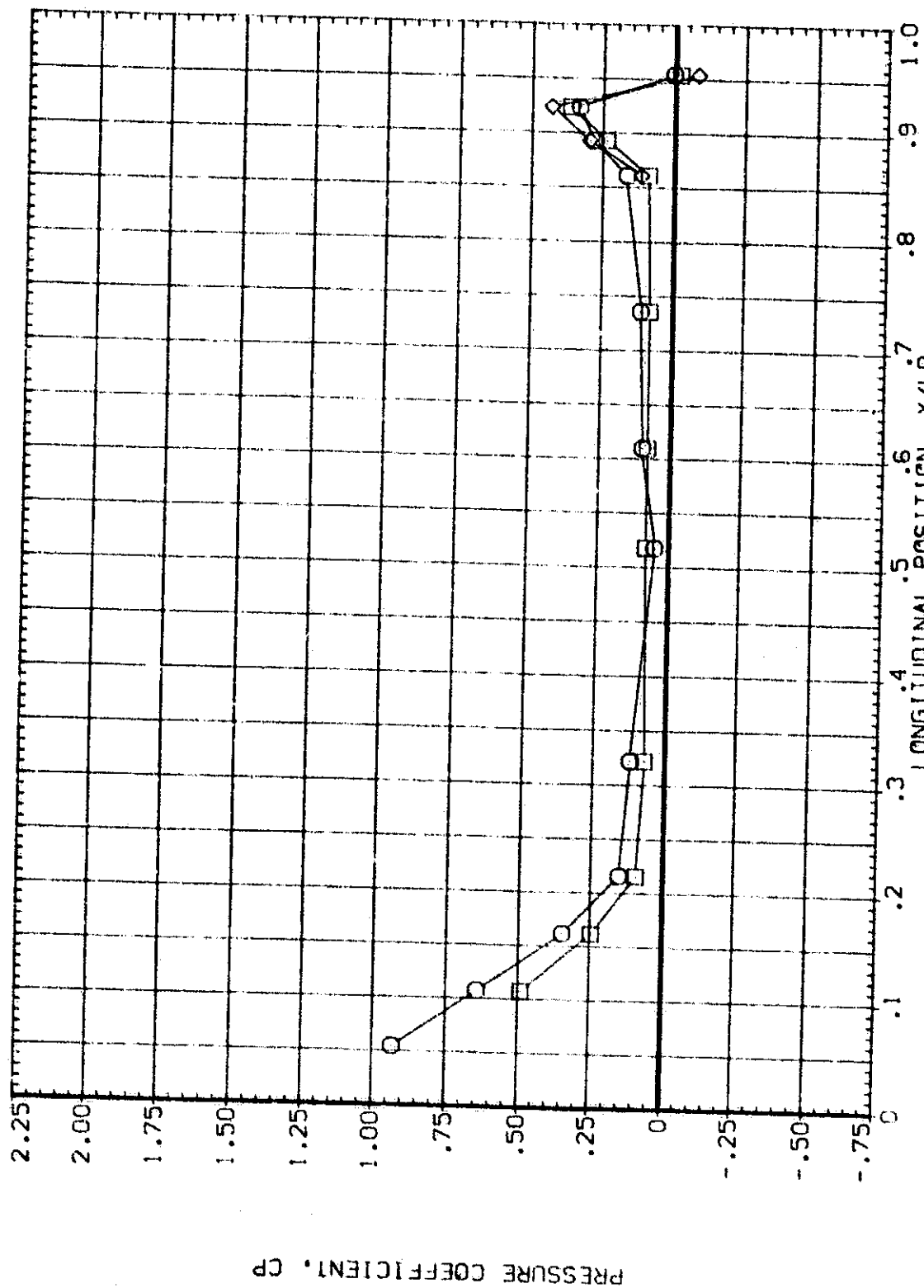


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A028)

SYMBOL

THETA  
45.000  
67.500  
90.000

ALPHA  
20.610

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

20.000  
135.000

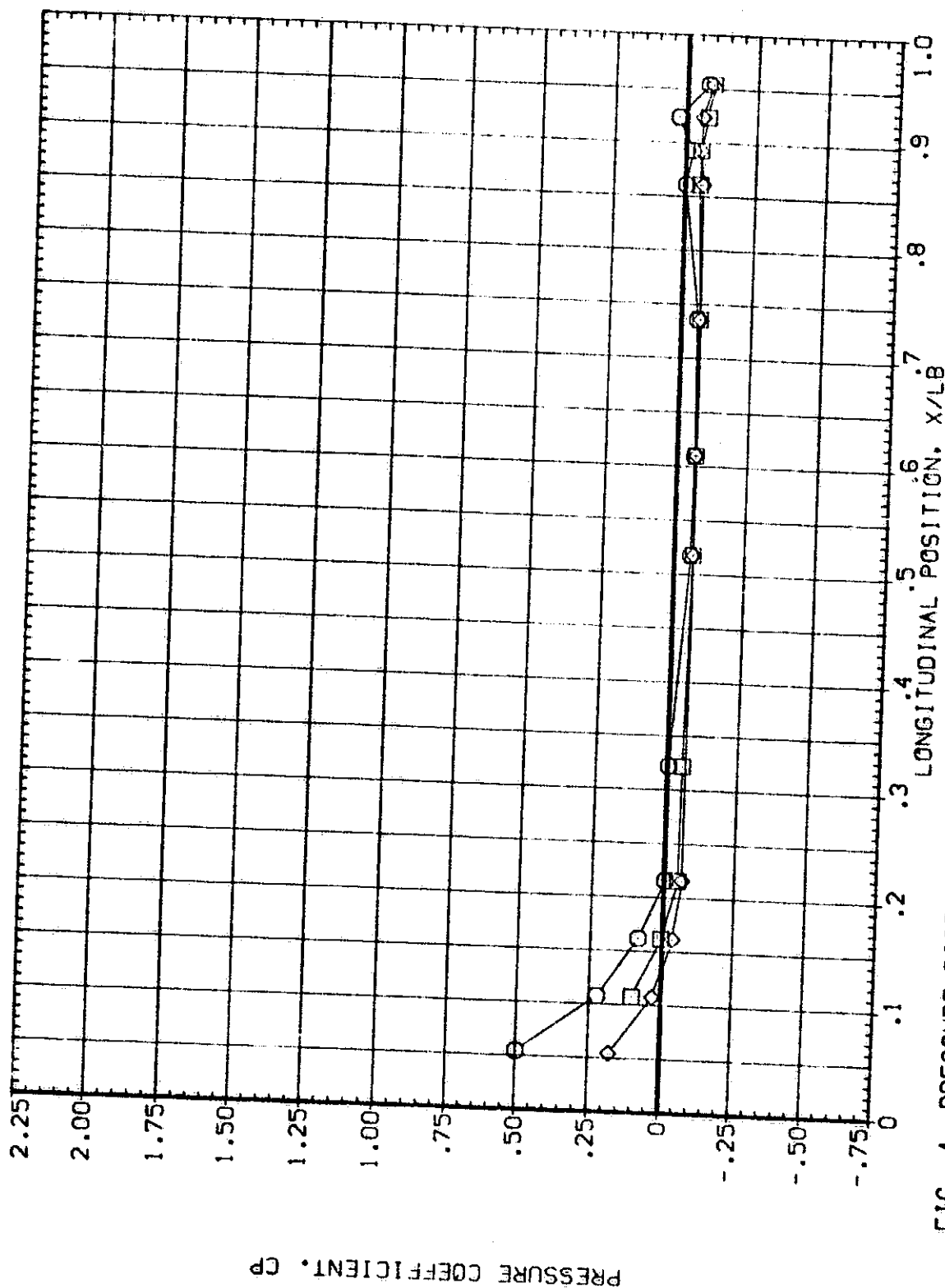


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA028)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
◇	112.500	20.610	3.480	1.000	1.000	135.000
□	135.000					
○	157.500					

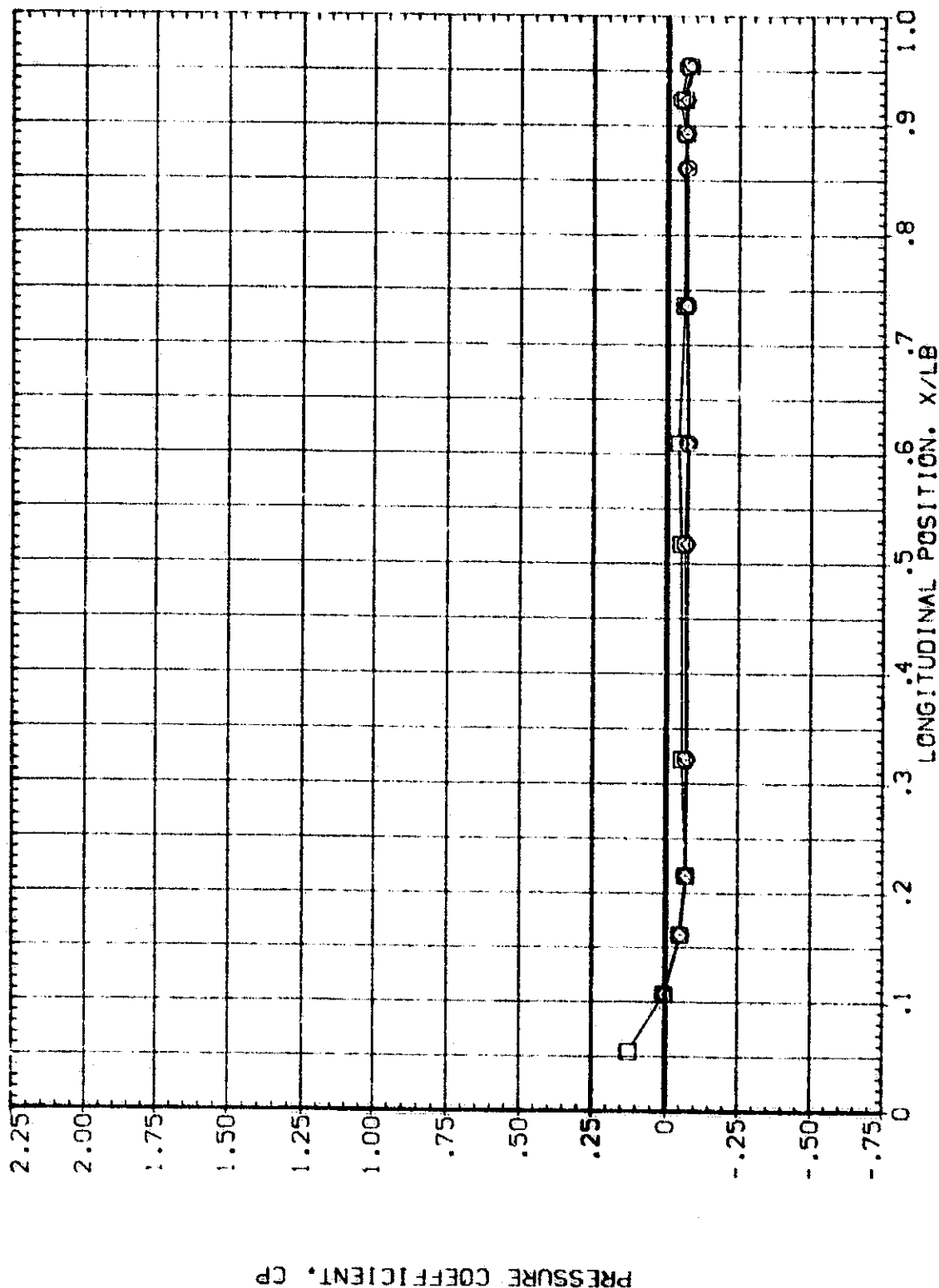


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA028)

SYMBOL  
○ □ ◇

THETA 180.000  
202.500  
225.000  
ALPHA 20.610  
MACH 3.480

PARAMETRIC VALUES  
BETA .000  
HOUNT 1.000  
OFFSET 20.000  
PHI 135.000

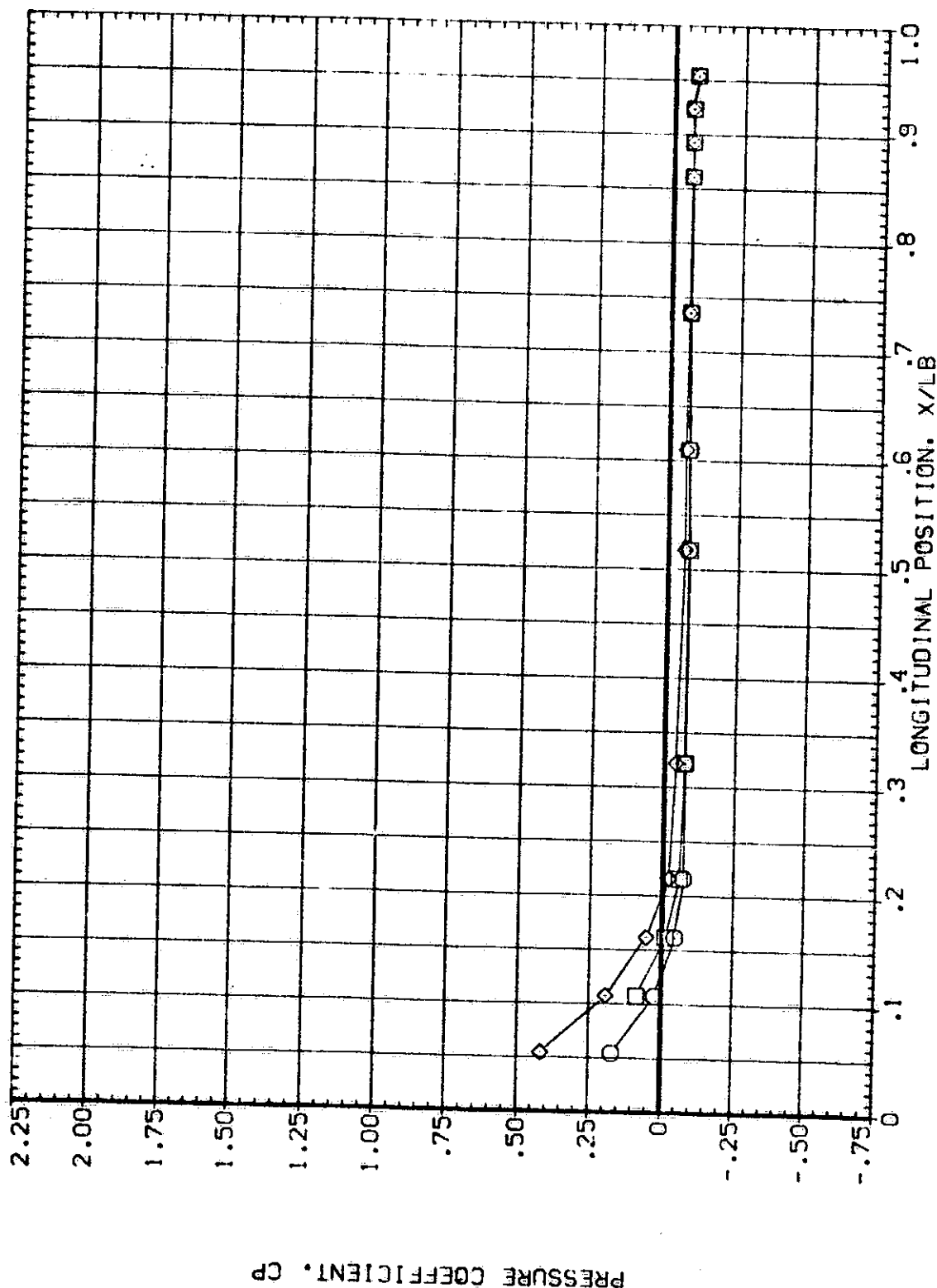


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (P1A028)

SYMBOL:   
 ○   
 □   
 ◇

THETA   
 247.500   
 270.000   
 292.500

ALPHA   
 20.610

MACH   
 3.480

BETA   
 MOUNT

PARAMETRIC VALUES   
 .000 OFFSET 20.000   
 1.000 PHI 135.000

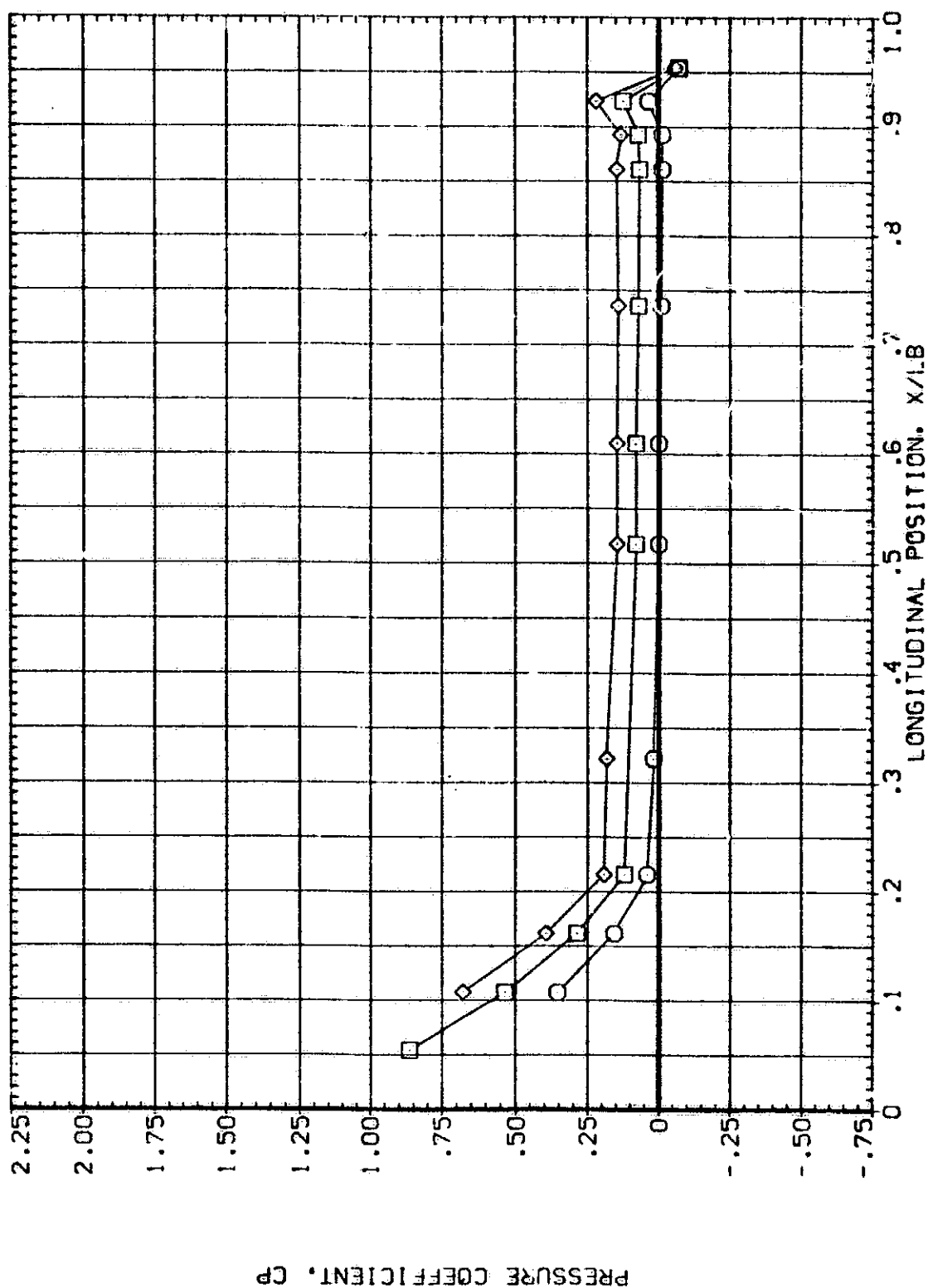


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1

(PIA028)

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
20.610

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI

20.000  
135.000

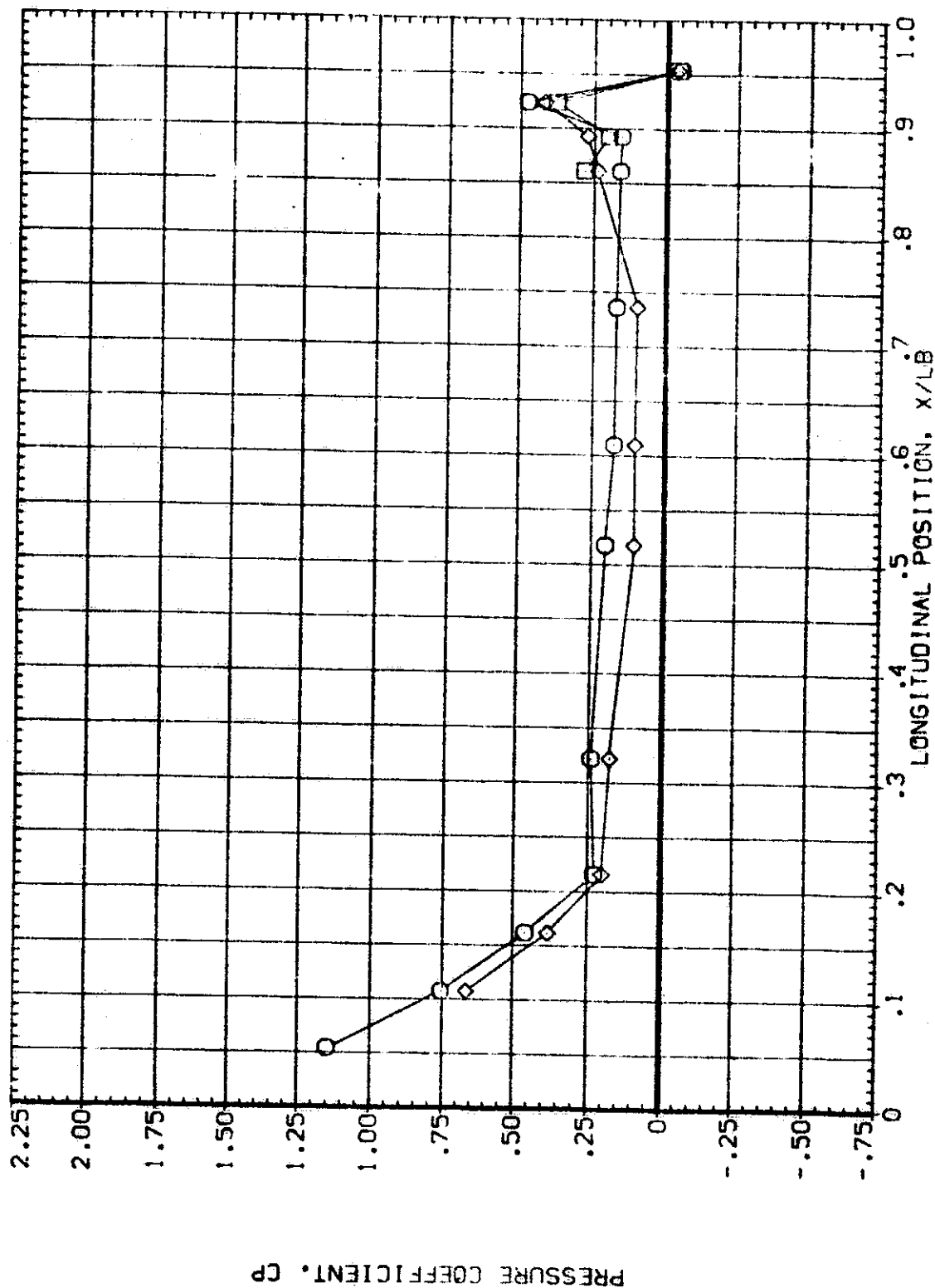


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA029)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	.000	OFFSET
○	14.000	24.660	3.480	1.000	PHI	20.000
□	24.000					135.000

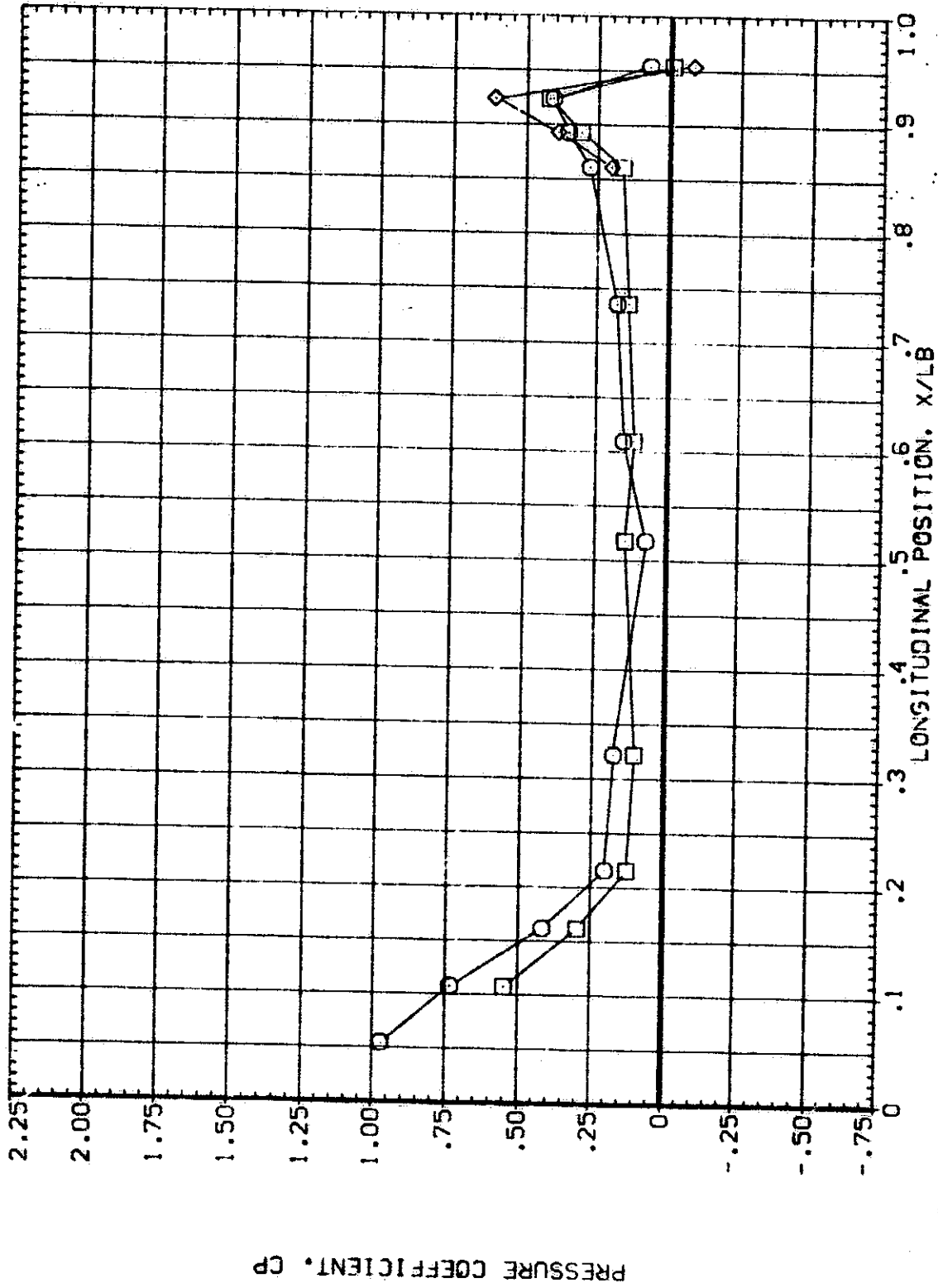


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A029)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES		
	45.000	67.500	90.000	24.660	3.480		BETA	OFFSET	PHI
□							MOUNT	1.000	135.000
◇									

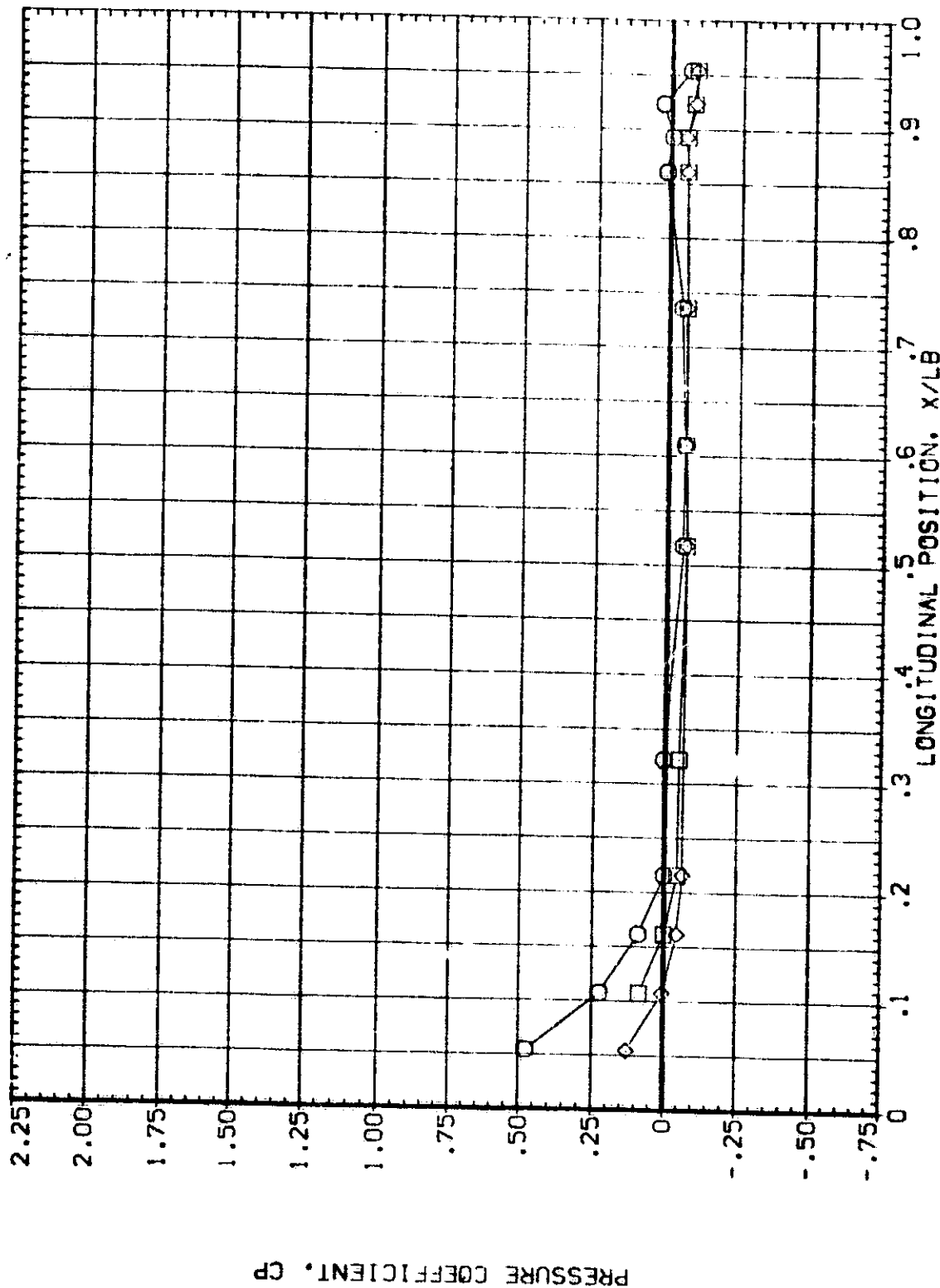


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A029)

SYMBOL THETA ALPHA MACH  
 112.500 24.660 3.480  
 135.000  
 157.500

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI 135.000

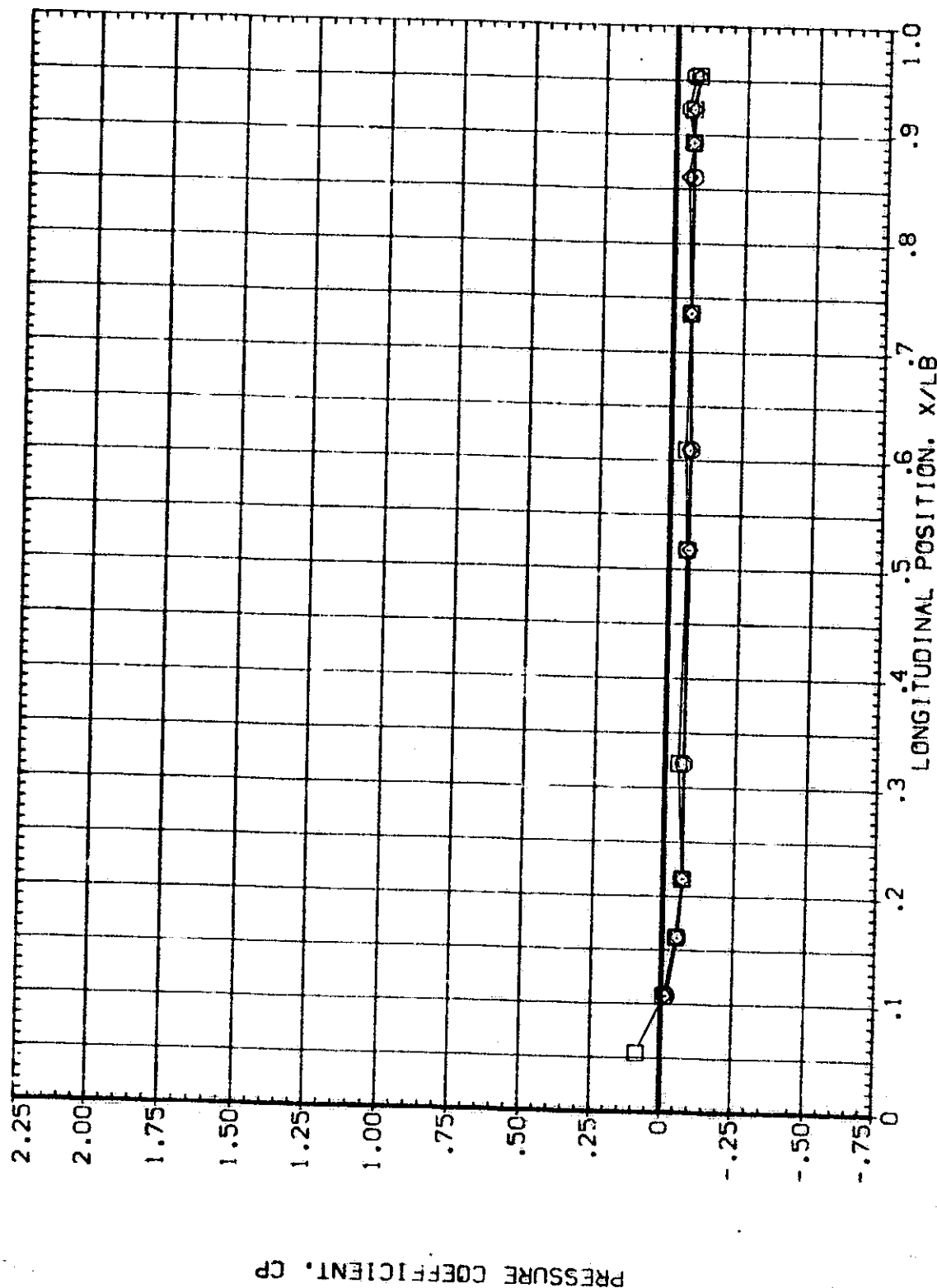


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A029)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	180.000	24.660	3.480	.000	1.000	20.000
□	202.500			1.000		135.000
◇	225.000					

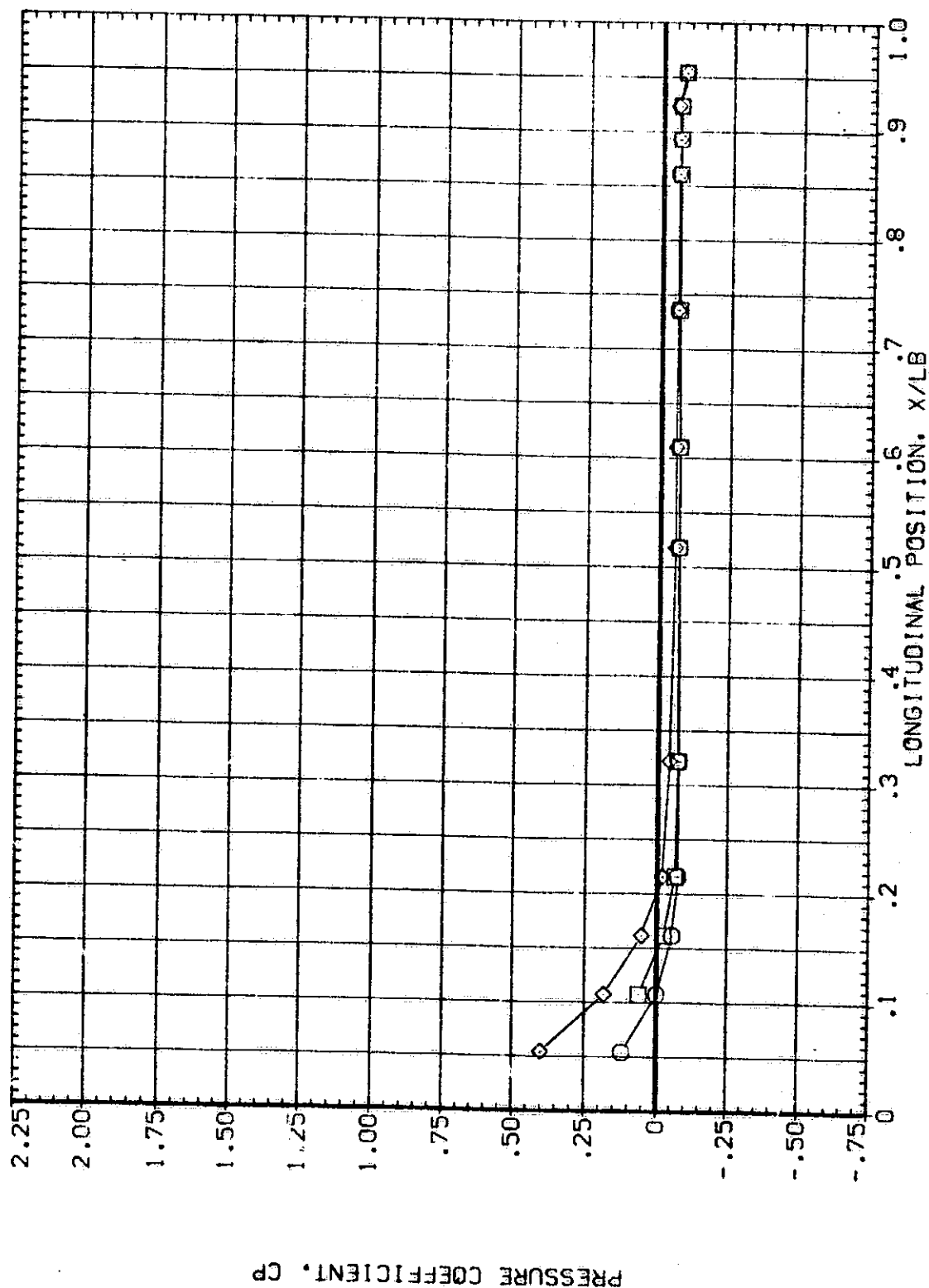


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A029)

SYMBOL THETA ALPHA MACH  
 O 247.500 24.660 3.480  
 □ 270.000  
 ◇ 292.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 20.000  
 135.000

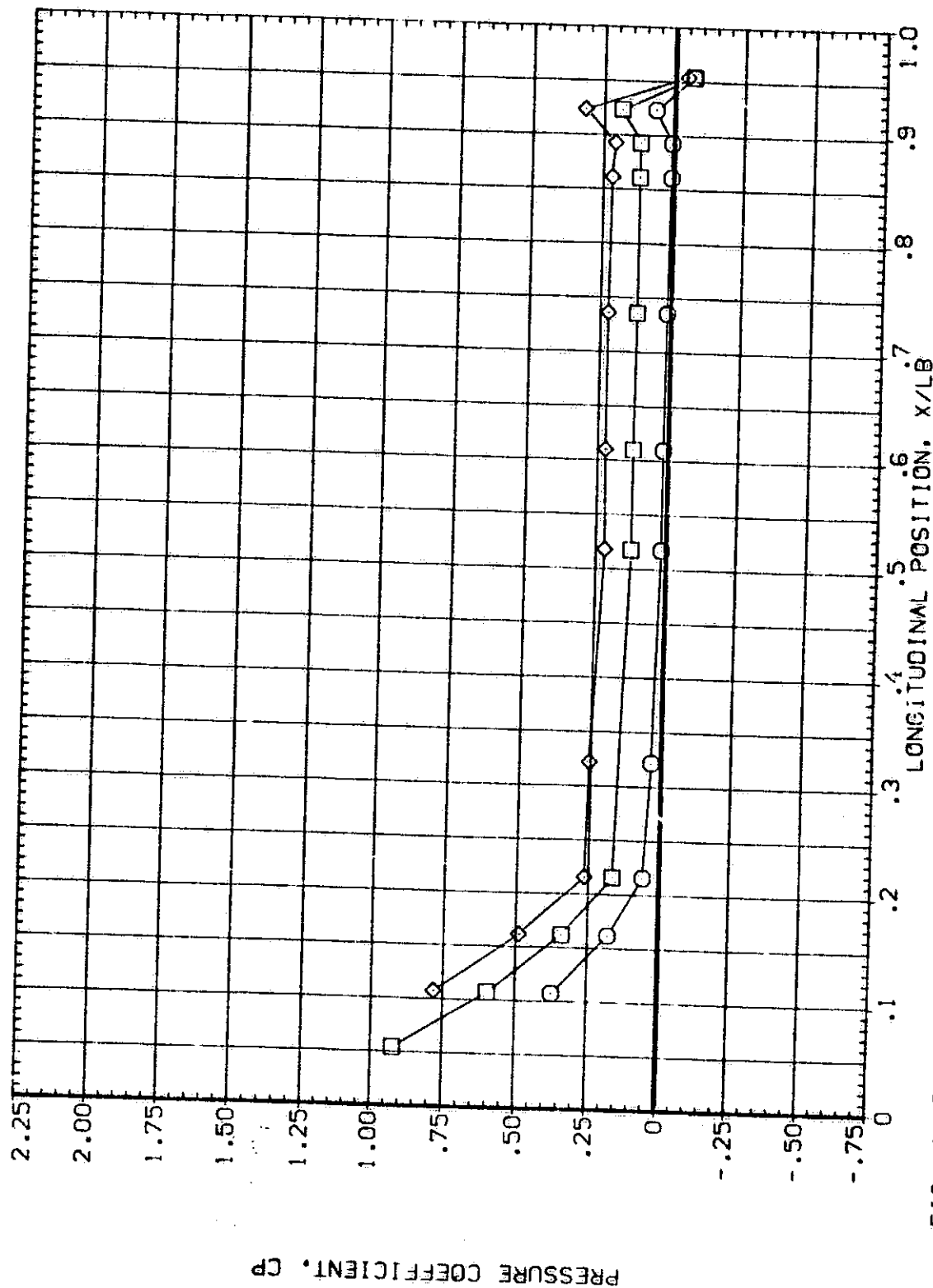


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES		
	315.000	24.550	3.480		.000	OFFSET	20.000
	325.000			MOUNT	1.000	PHI	135.000

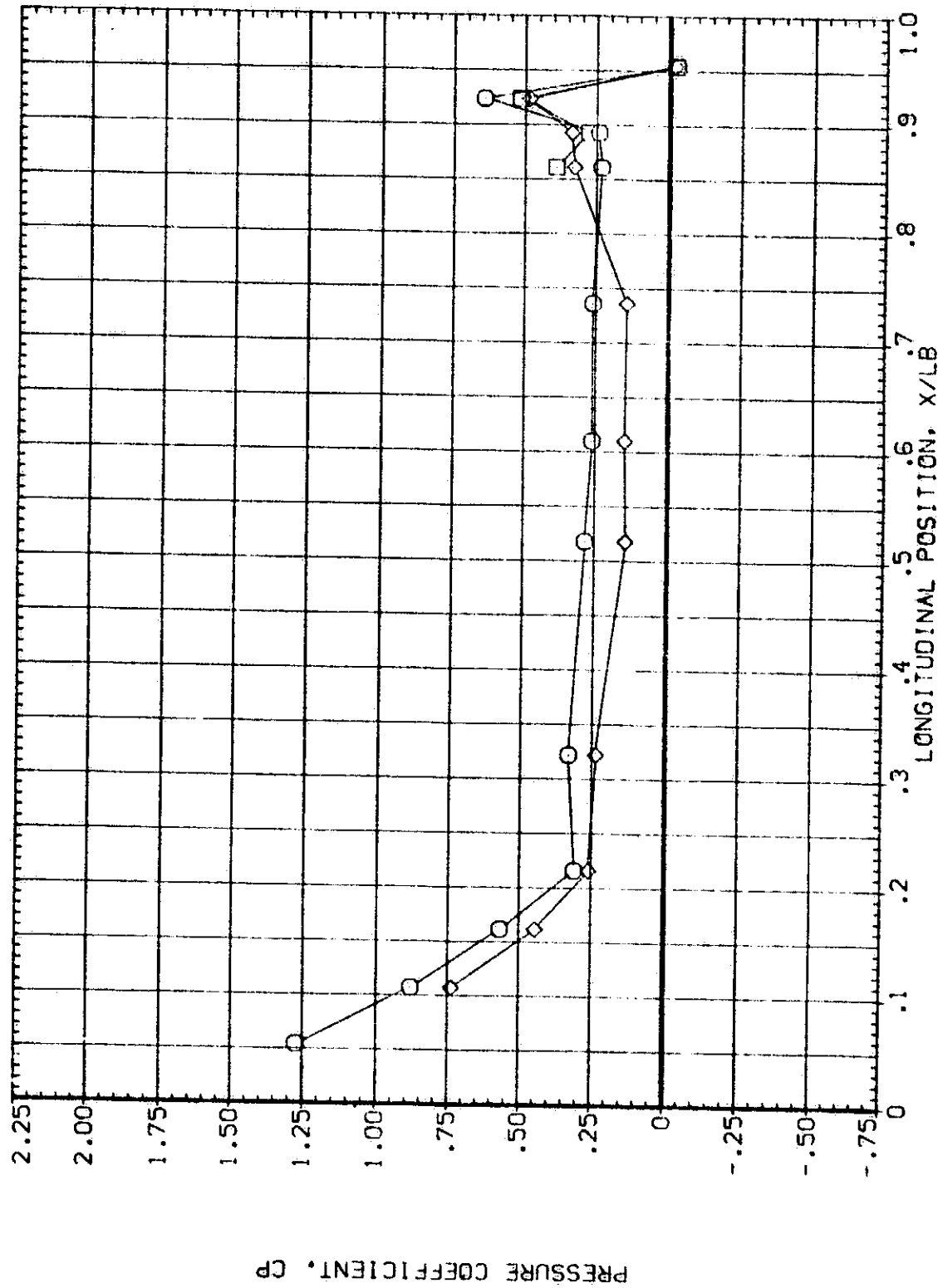


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA030)

SYMBOL  
 ○  
 □  
 ◇

THETA .000  
 14.000  
 24.000

ALPHA 28.700

MACH 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 20.000  
 135.000

OFFSET  
 PH1

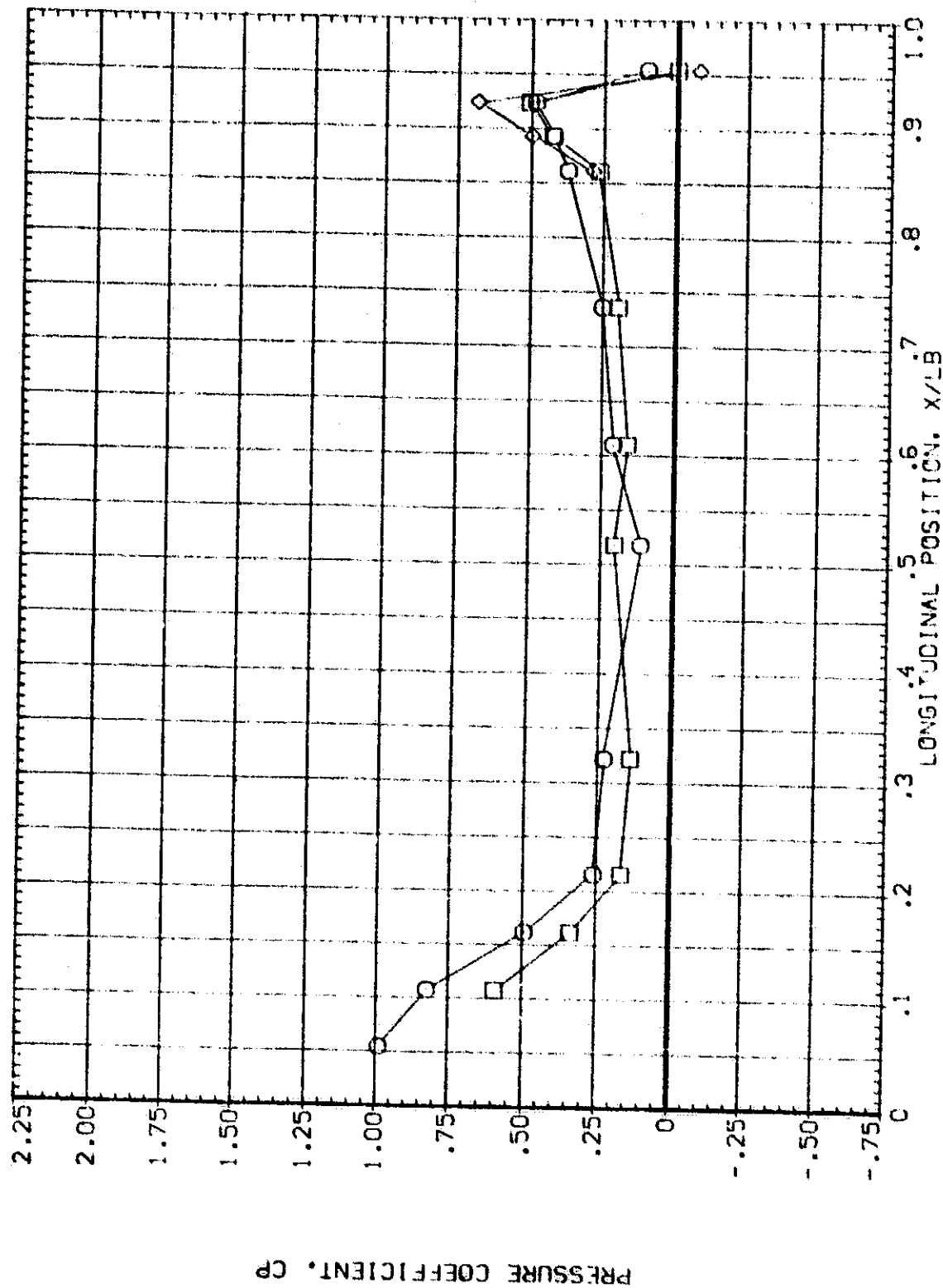


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIAC30)

SYMBOL

THETA  
45.000  
67.500  
90.000

ALPHA  
28.700

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

1.000  
135.000

OFFSET  
PHI

20.000  
135.000

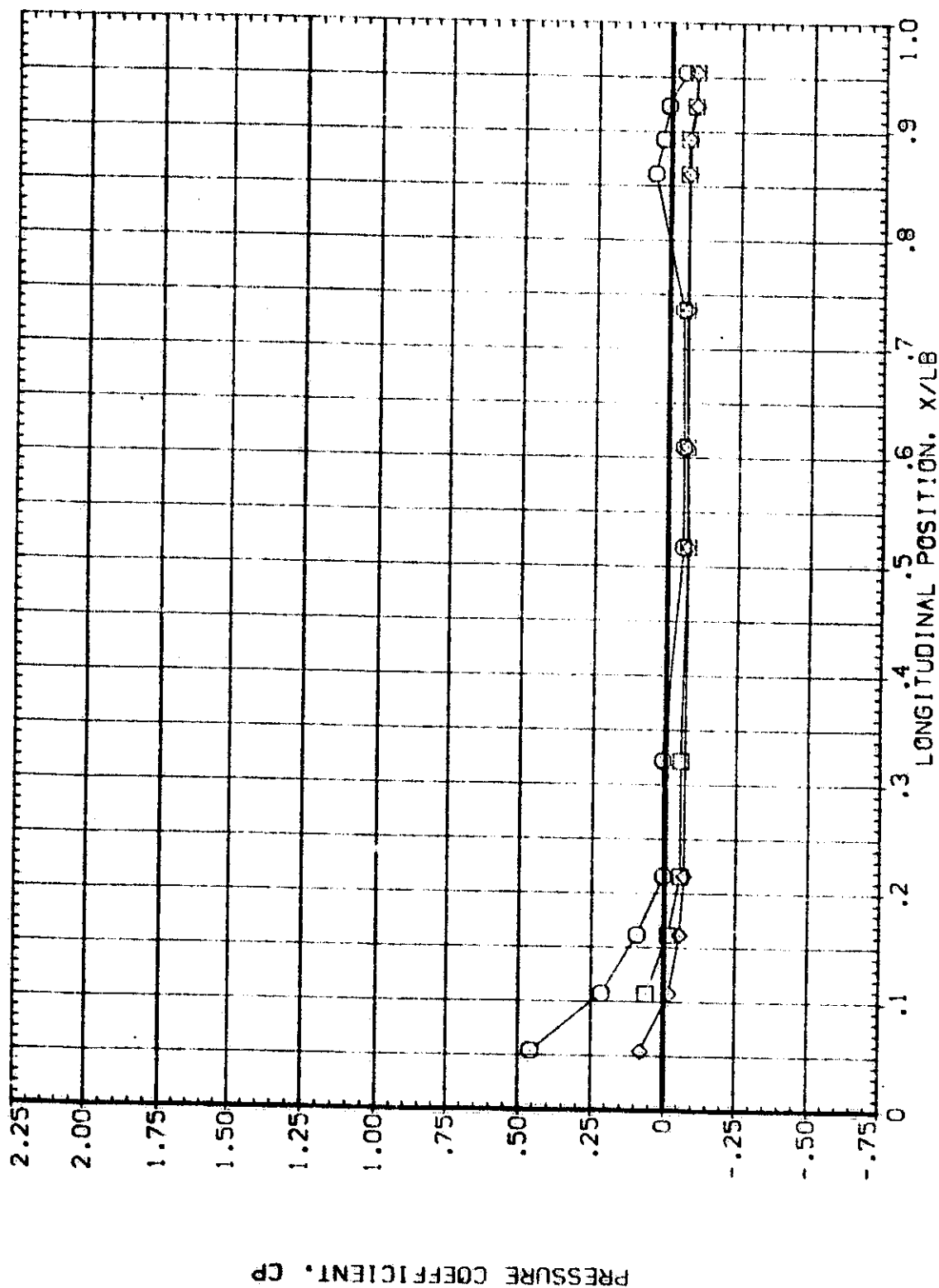


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA030)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	28.700	3.480	MOUNT	1.000	20.000
□	135.000					135.000
◇	157.500					

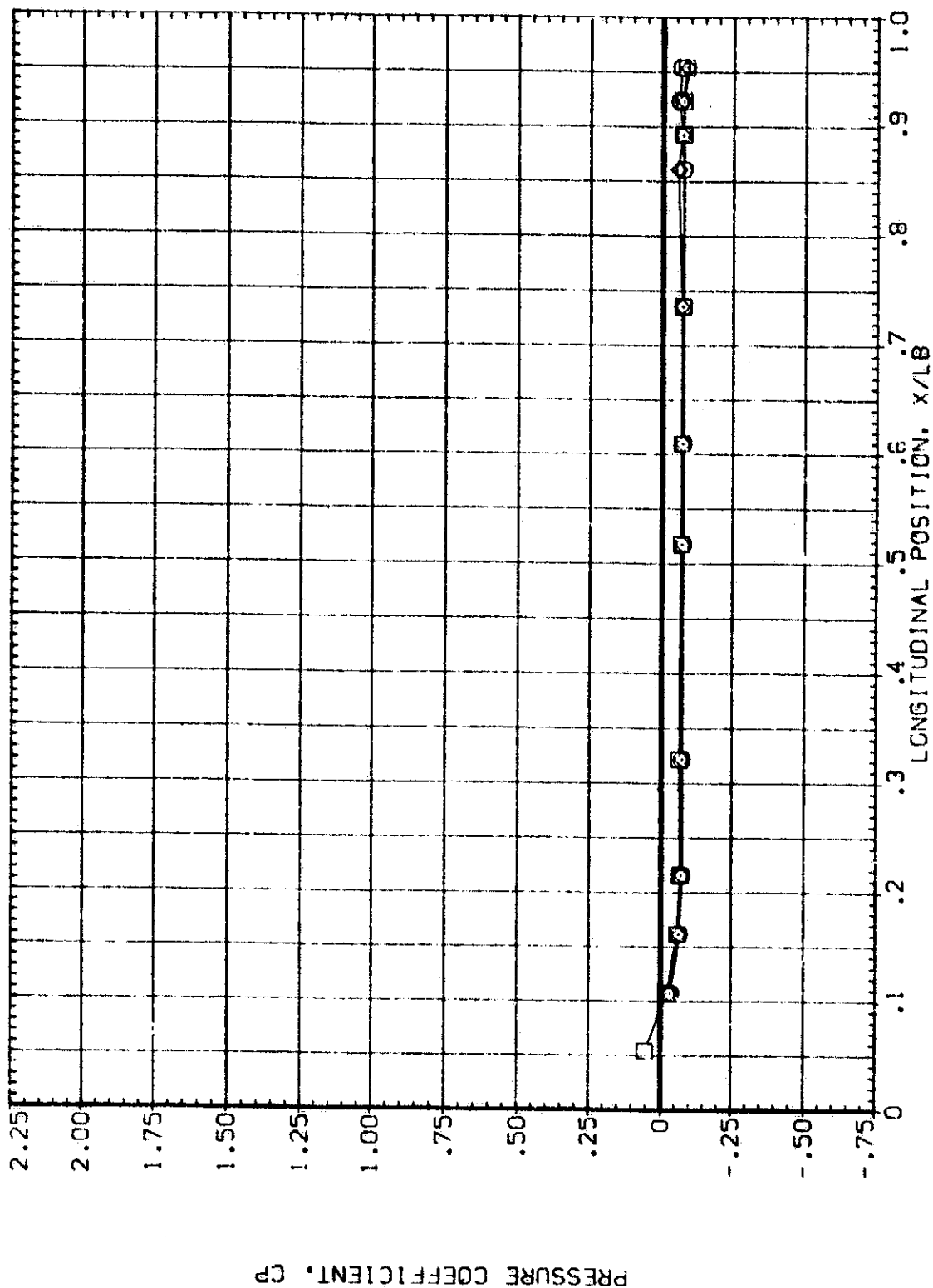


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIAD3C)

SYMBOL    THETA    ALPHA    MACH  
 ○    247.500    26.700    3.480  
 □    270.000  
 ◇    292.500

PARAMETRIC VALUES  
 BETA    .000    20.000  
 HOUJNT    1.000    135.000  
 PHI

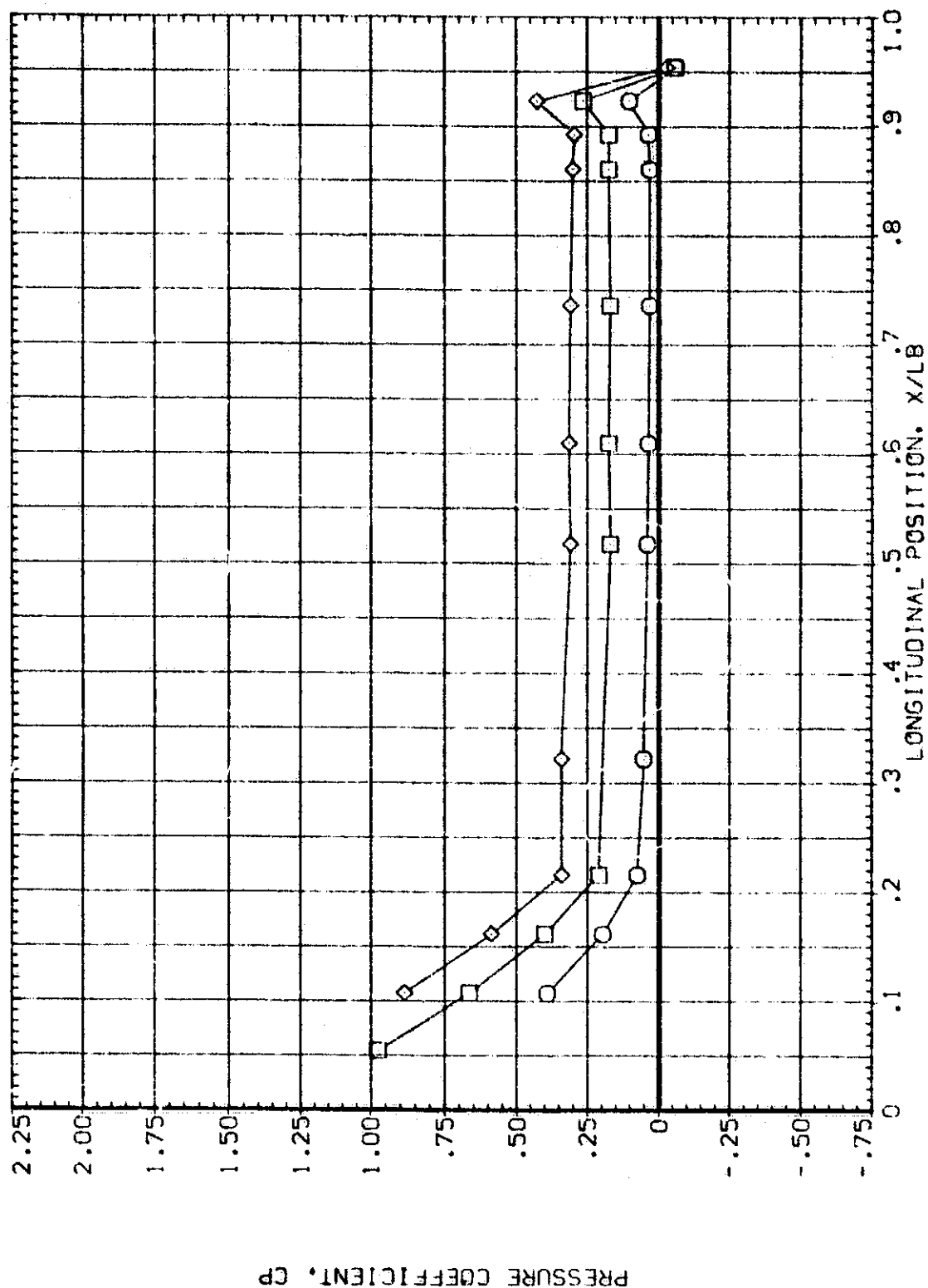


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A030)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	315.000	28.700	3.480	.000	1.000	20.000
□	326.000			1.000		135.000
◇	346.000					

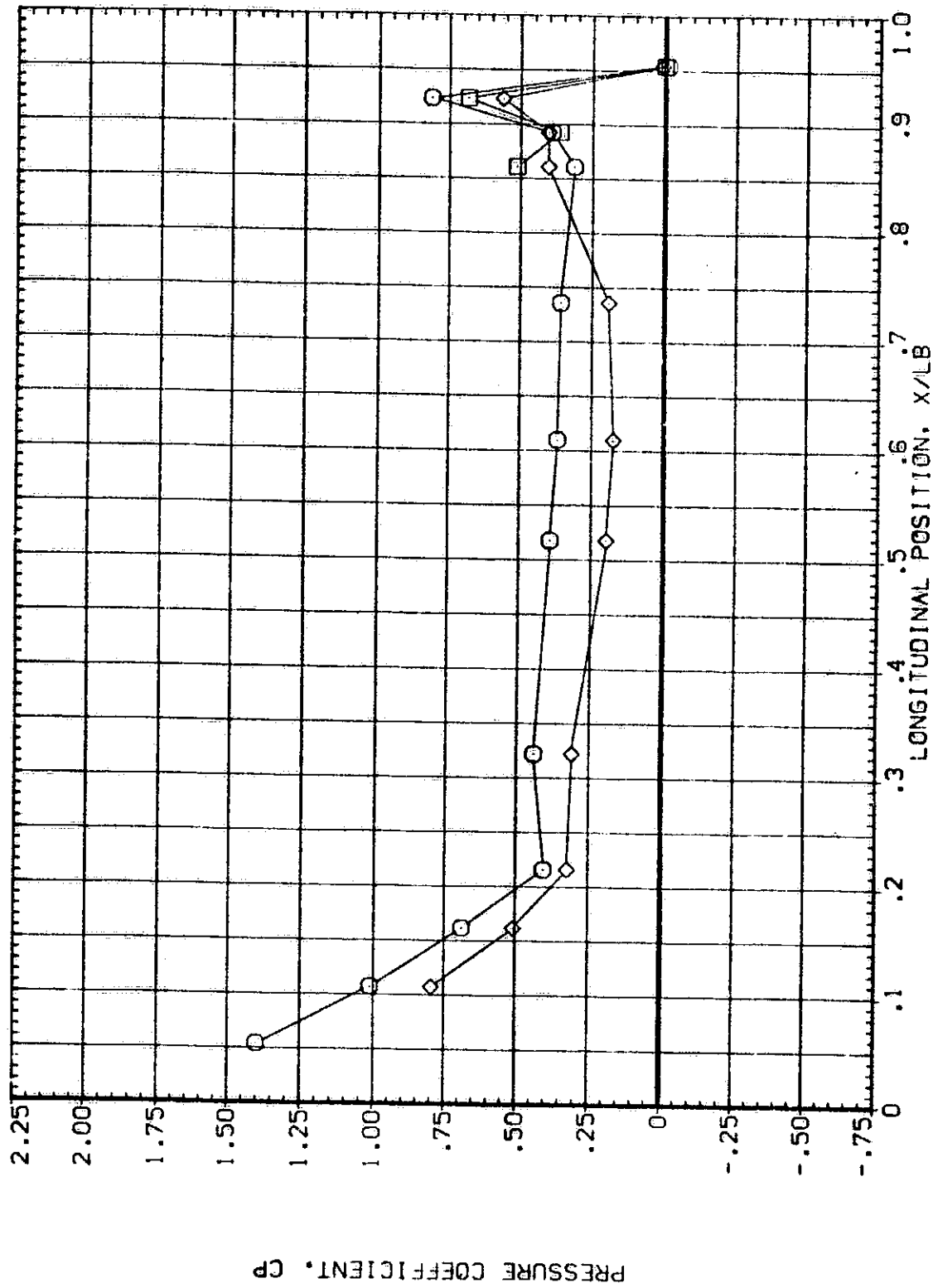


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A031)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	.000	-8.360	3.480	.000	.000	180.000
◇	14.000			1.000		
	24.000					

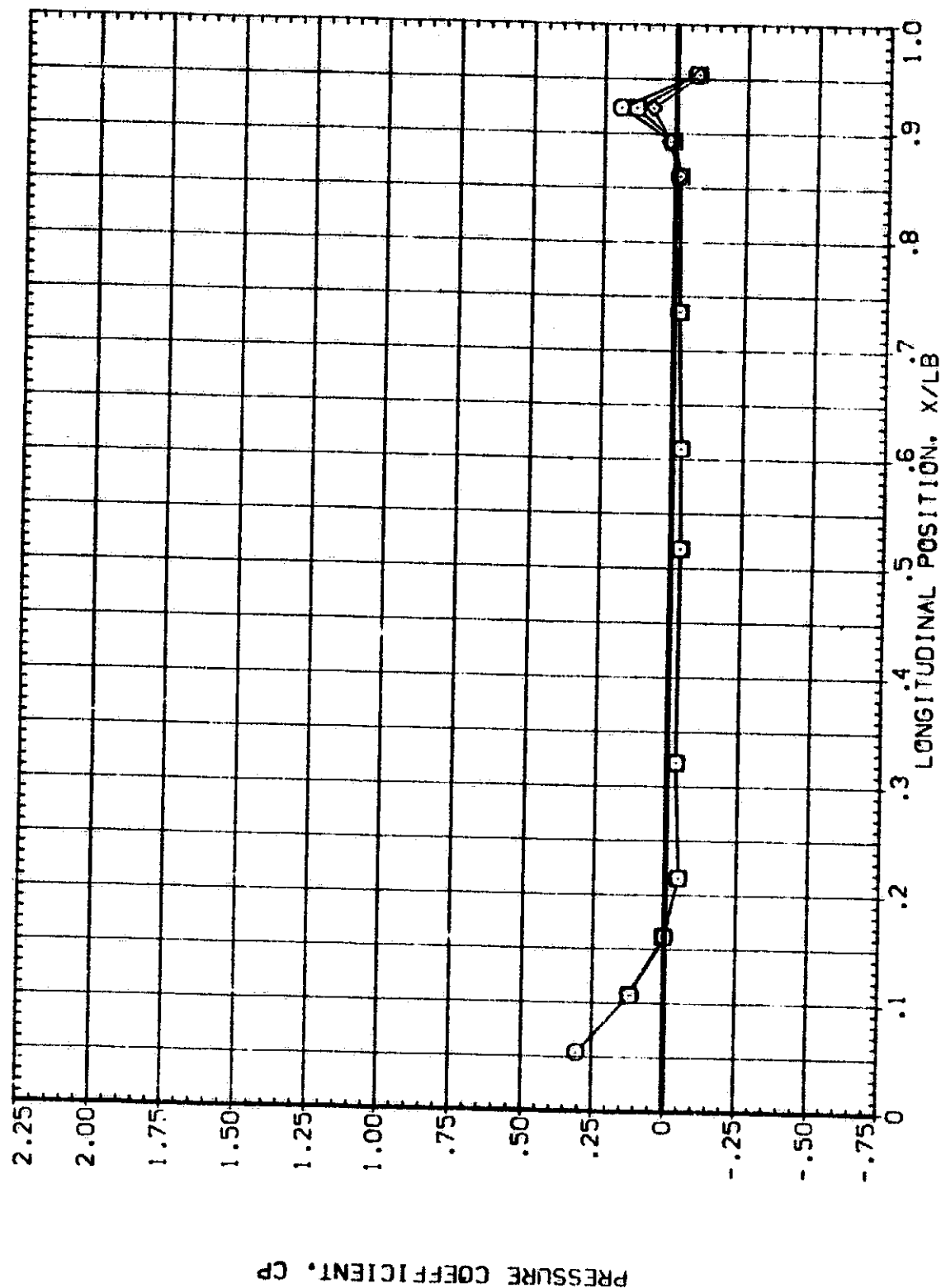


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A031)

SYMBOL

THETA  
45.000  
67.500  
90.000

ALPHA  
-8.360

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT  
1.000  
1.000  
PHI  
180.000

.000  
OFFSET  
180.000

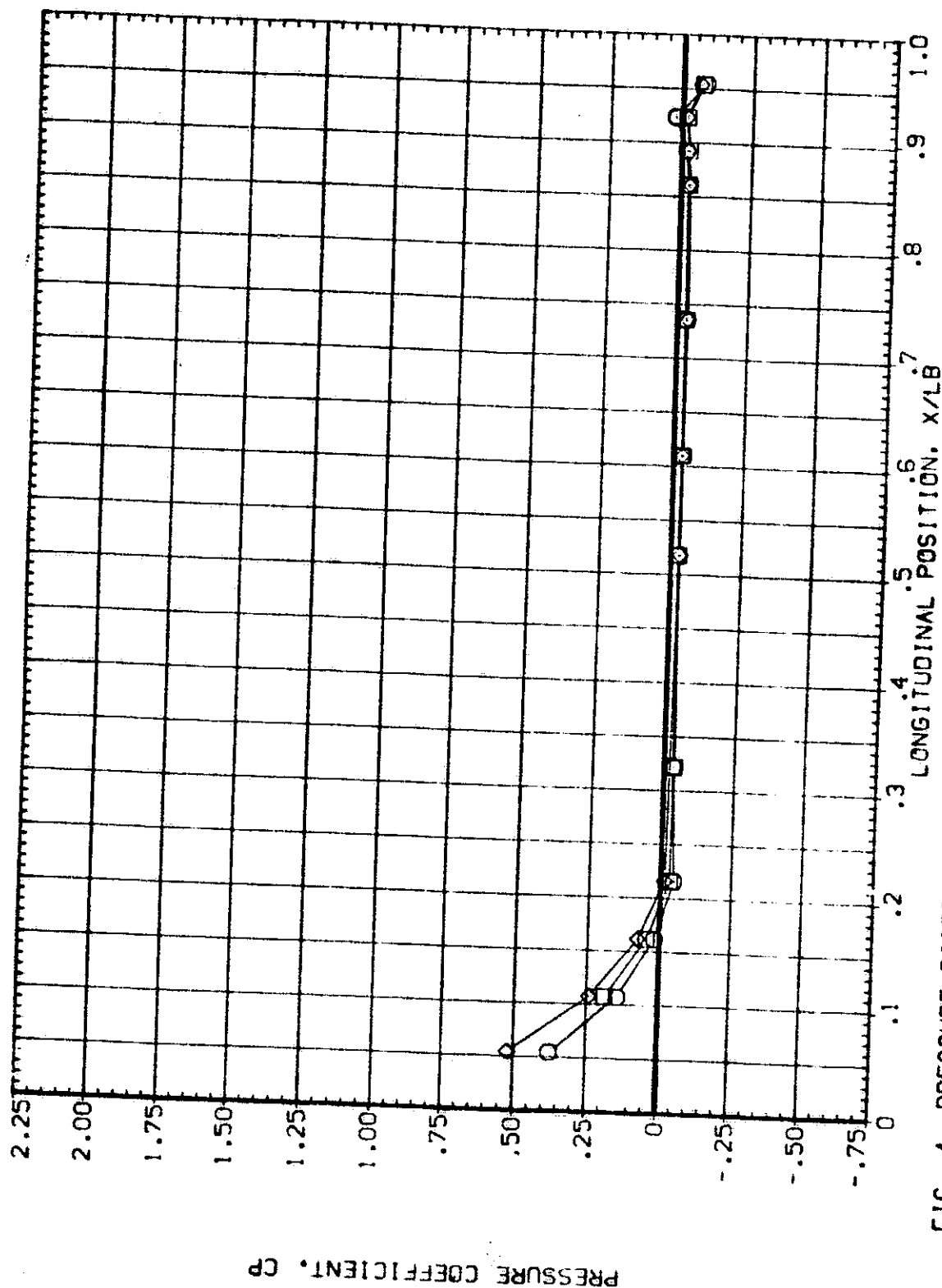


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA031)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	-8.360	3.480	.000	.000	.000
□	135.000			1.000		180.000
◇	157.500					

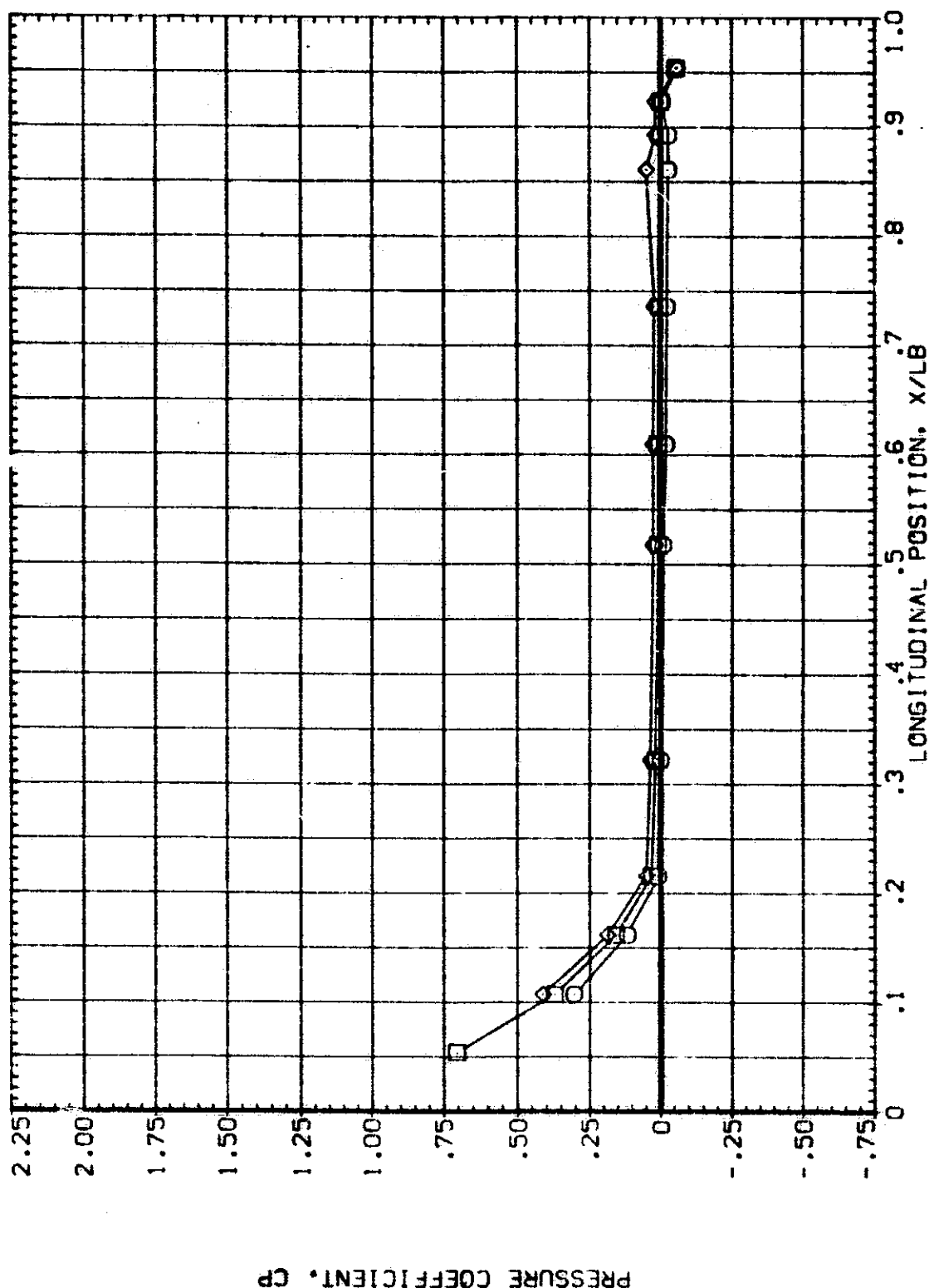


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA031)

SYMBOL

THETA  
180.000  
202.500  
225.000

ALPHA  
-6.360

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

.000  
180.000

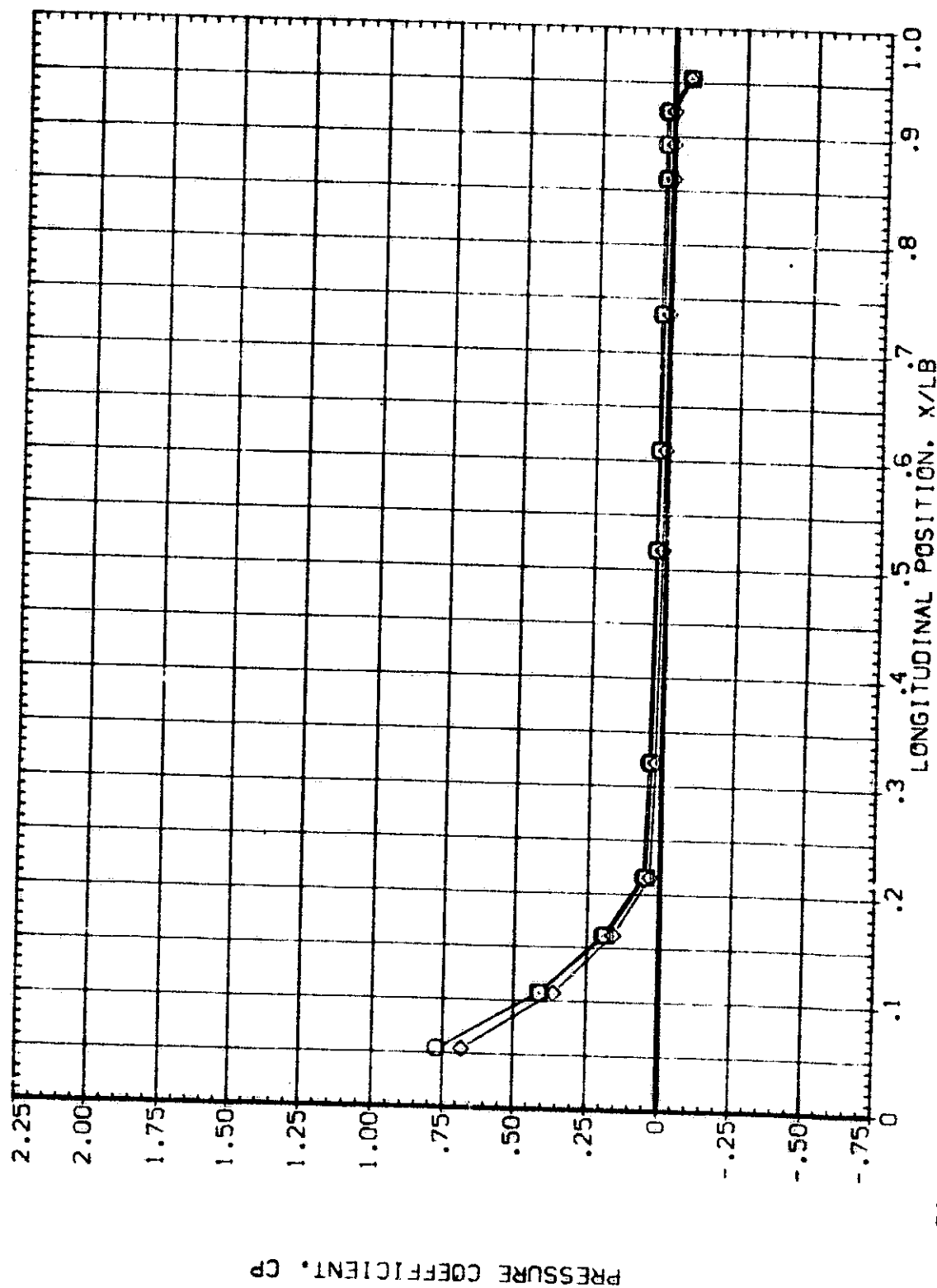


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA031)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	-8.360	3.480	.000	.000	.000
□	270.000			1.000		180.000
◇	292.500					

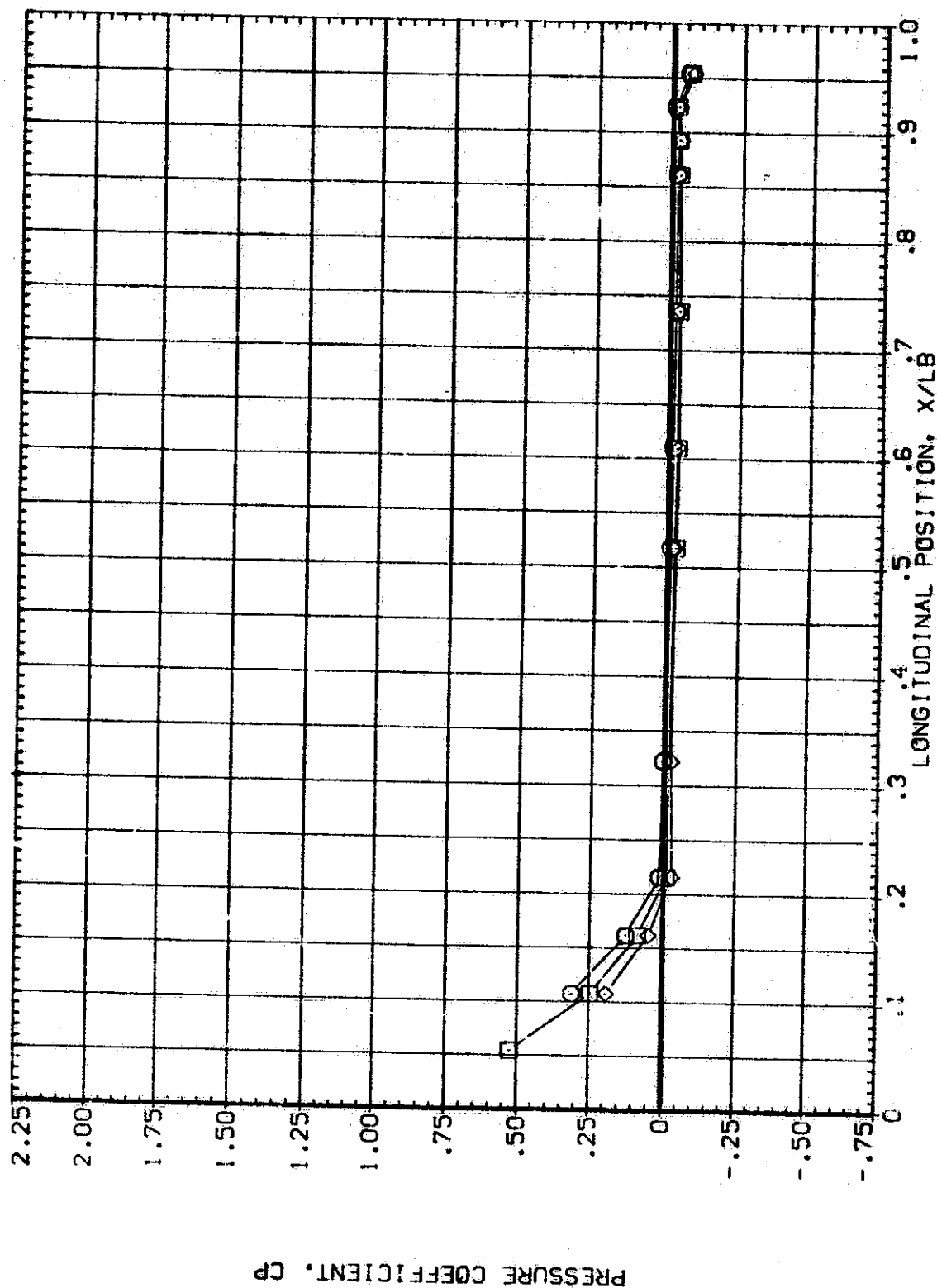


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA031)

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
-8.360

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT

.000  
1.000  
180.000

OFFSET  
PHI

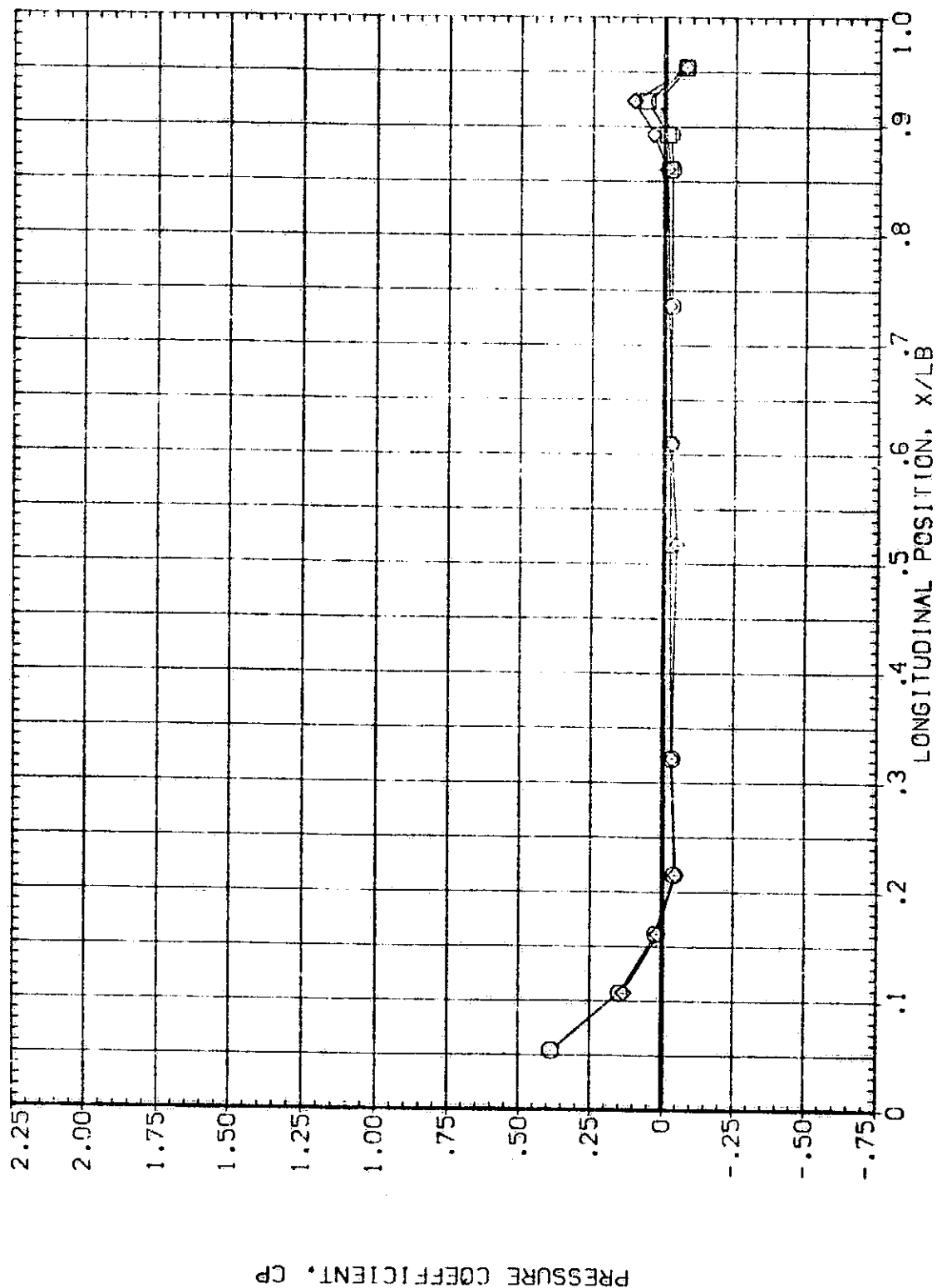


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A032)

SYMBOL

THETA  
14.000  
24.000

ALPHA  
-4.330

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000 1.000  
OFFSET PHI  
.000 180.000

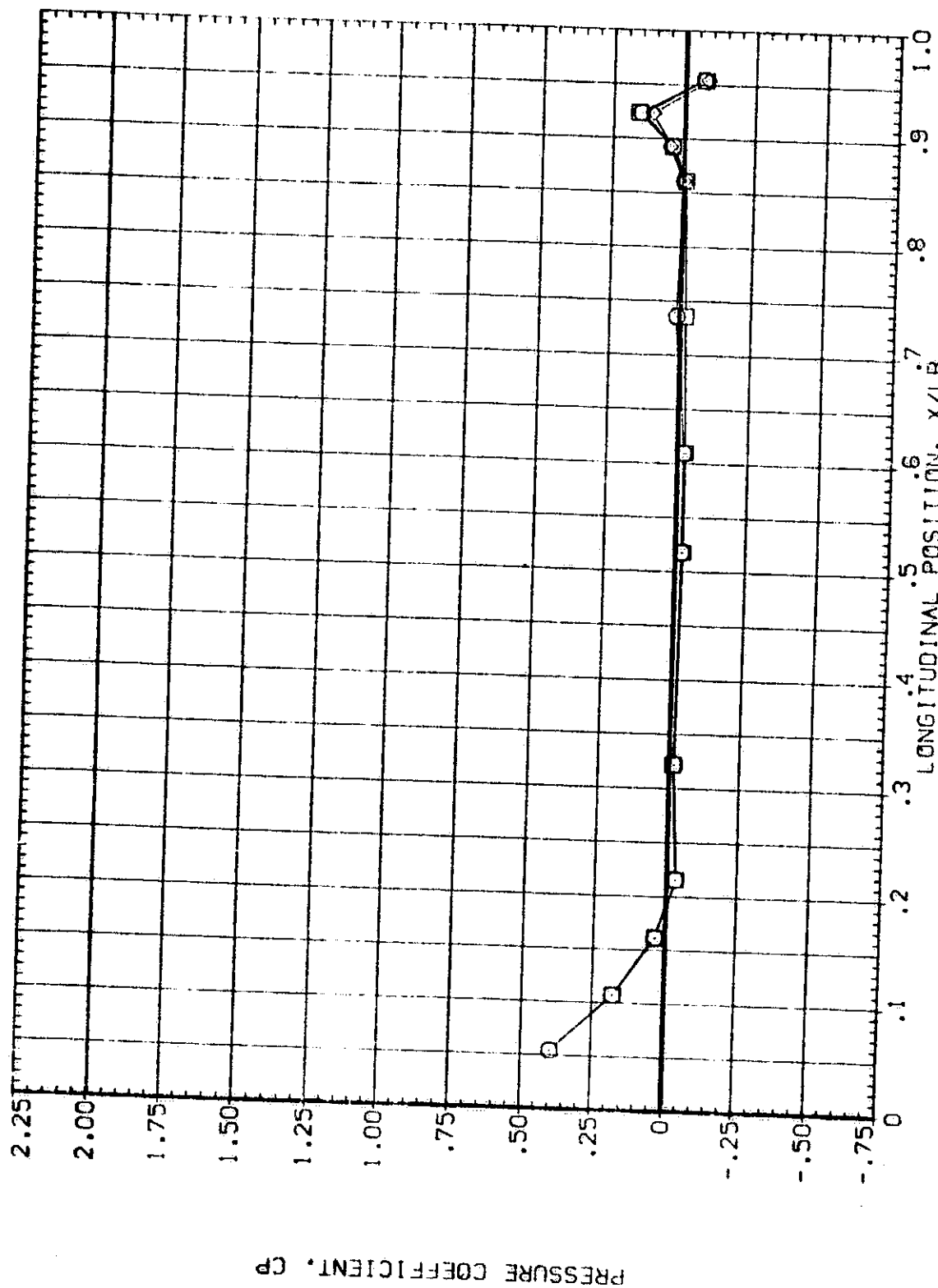


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○ □ ◇

THETA 45.000  
 ALPHA -4.330  
 MACH 3.480

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI 180.000

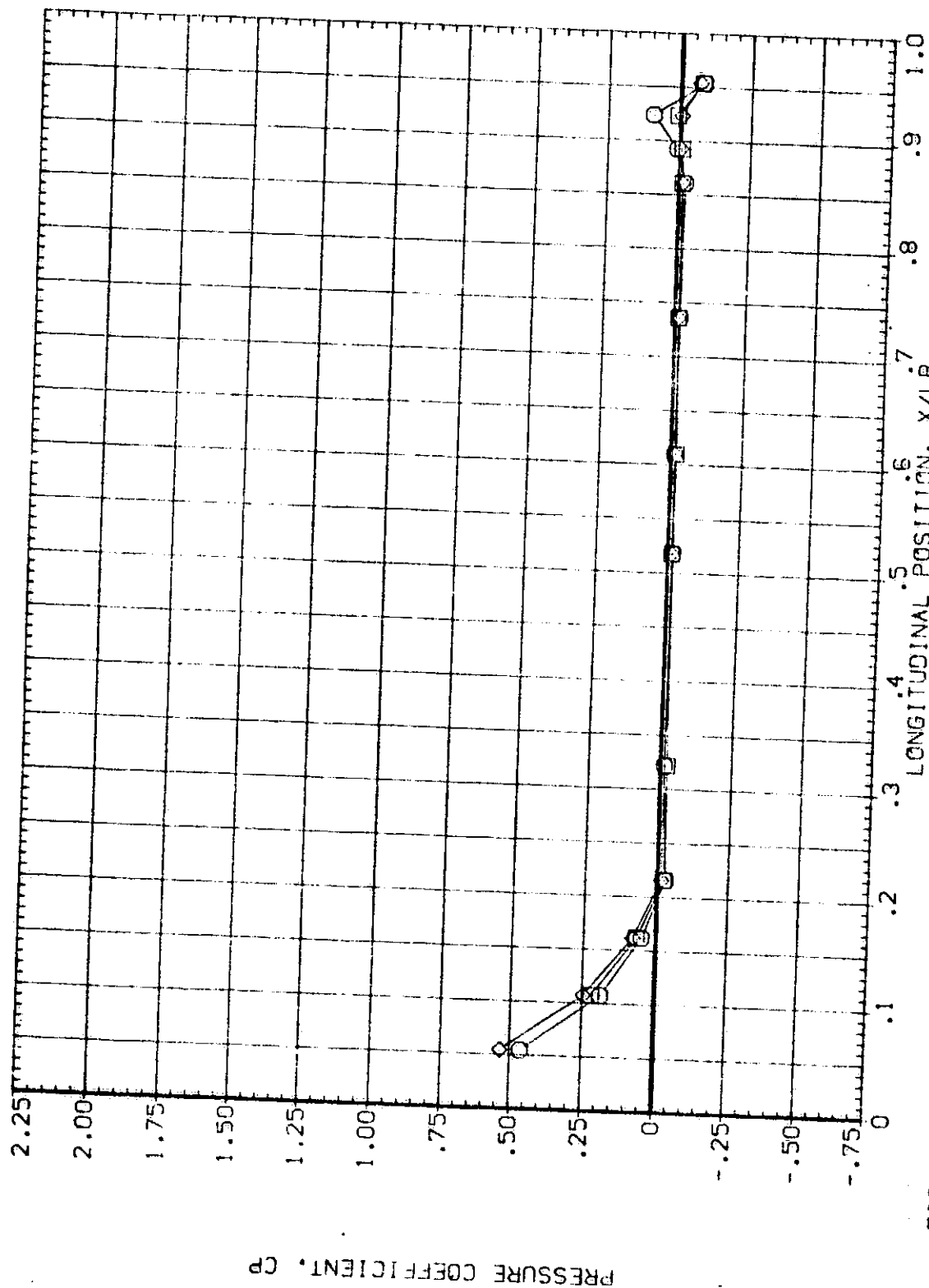


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA032)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	-4.330	3.480	MOUNT	1.000	180.000
□	135.000					
◇	157.500					

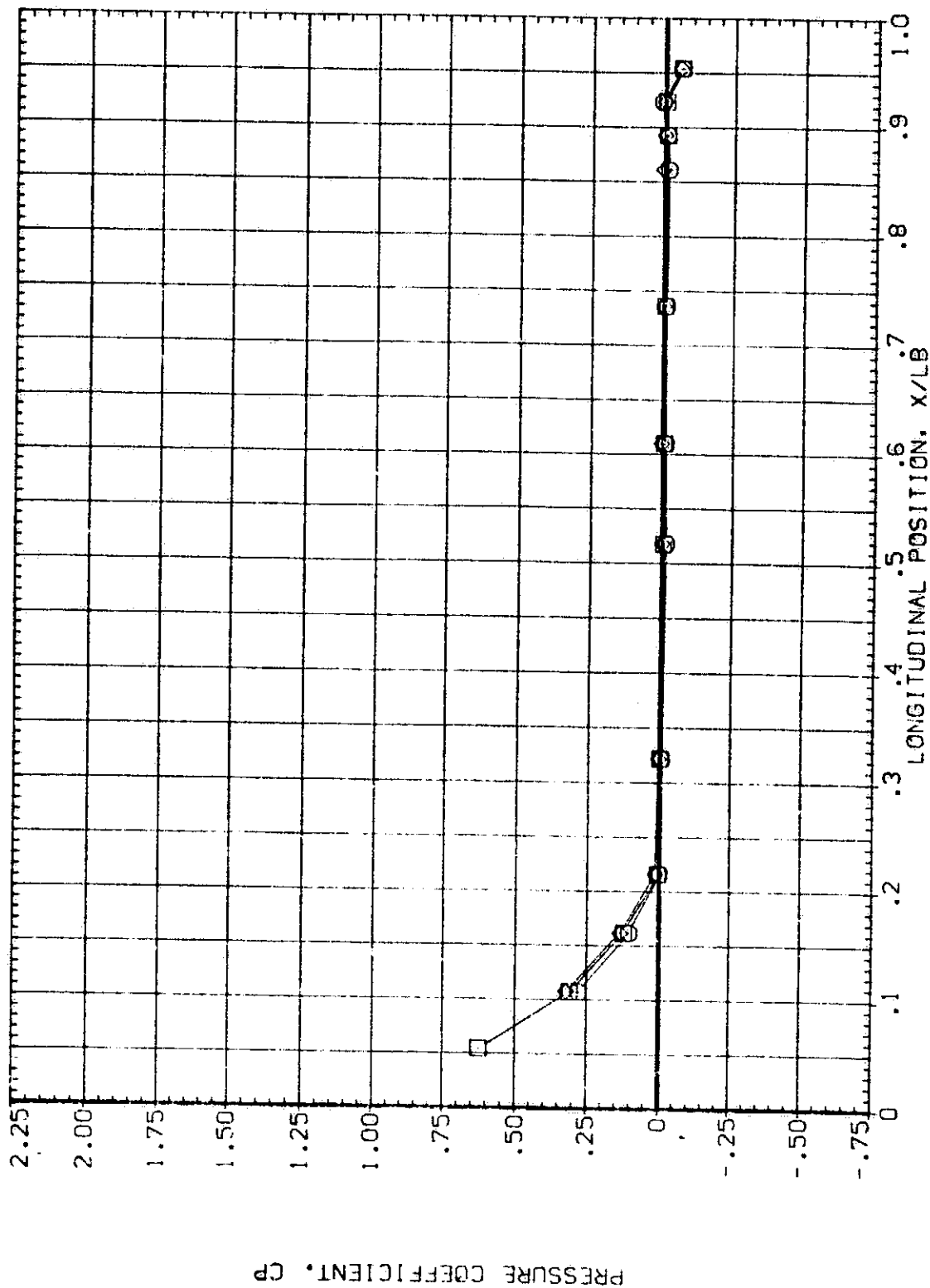


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA032)

SYMBOL  
○ □ ◇

THETA  
180.000  
272.500  
225.000

ALPHA  
-4.330

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
180.000  
180.000

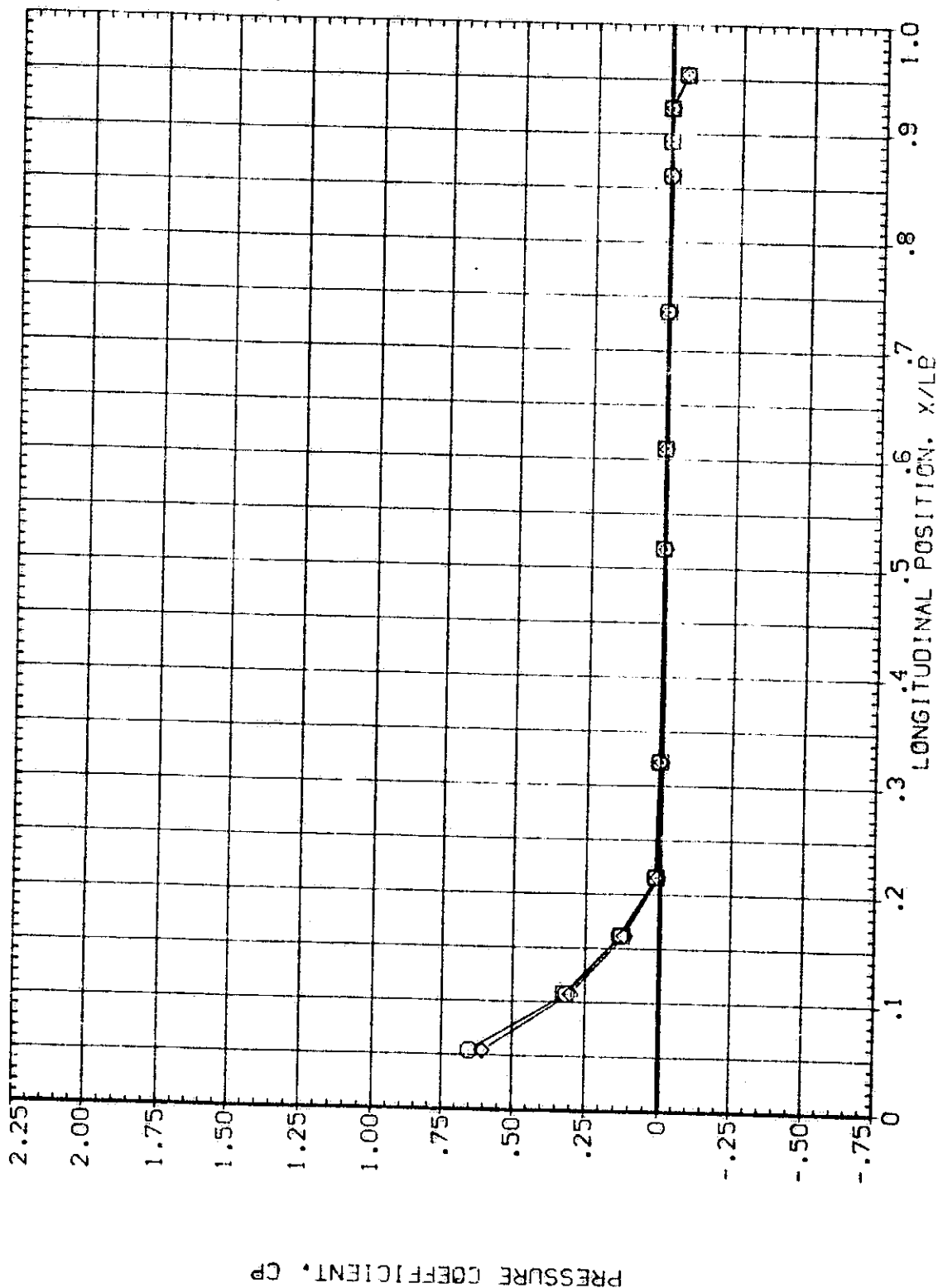


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A032)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
-4.330

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT  
.000  
1.000  
PHI  
180.000

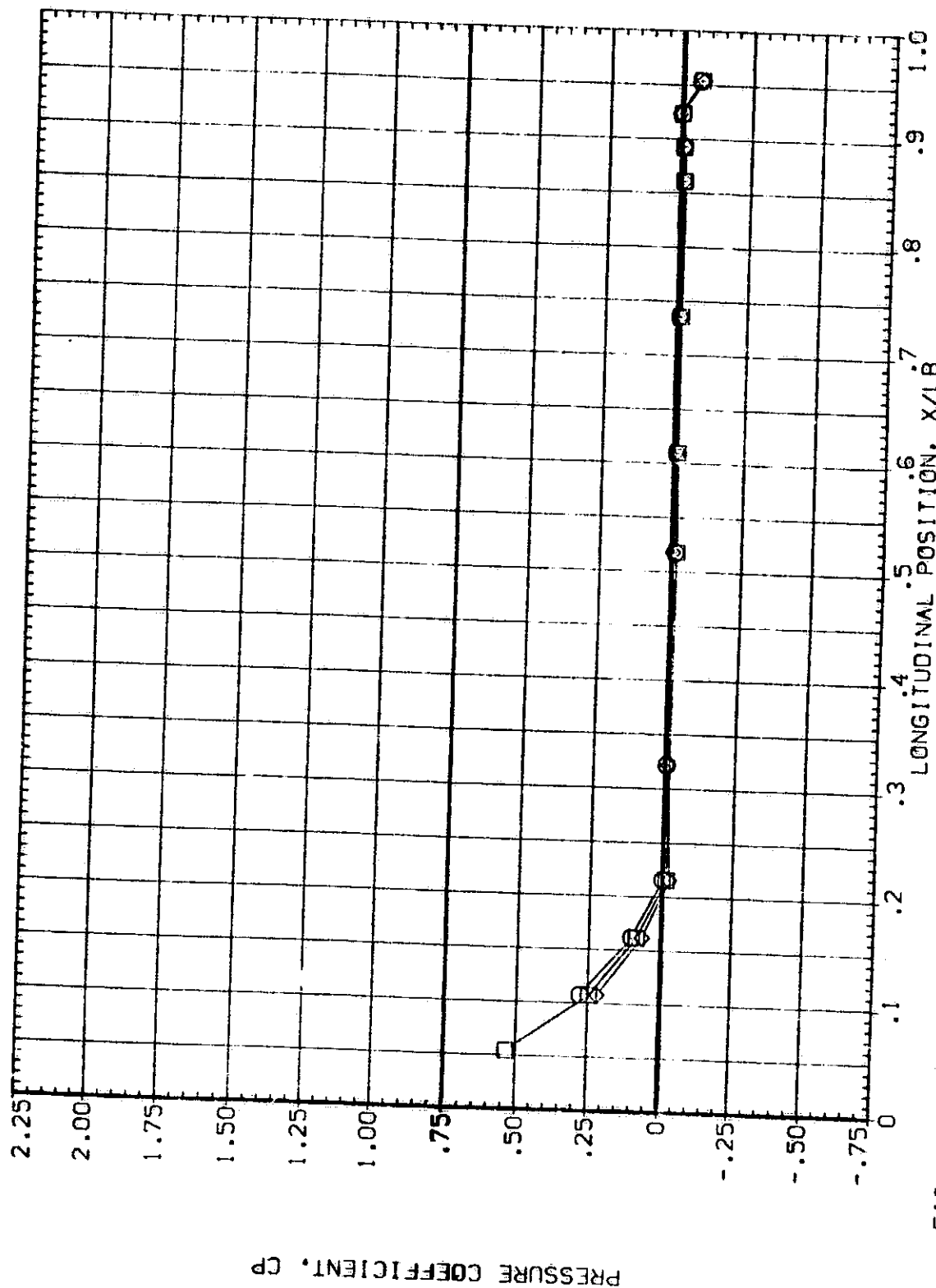


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA032)

PARAMETRIC VALUES  
 .000 .000 .000  
 BETA OFFSET  
 MOUNT PHI 180.000

TIME ALPHA MACH  
 315.000 -4.330 3.480  
 326.000  
 346.000

SYMBOL  
 ○  
 □  
 ◇

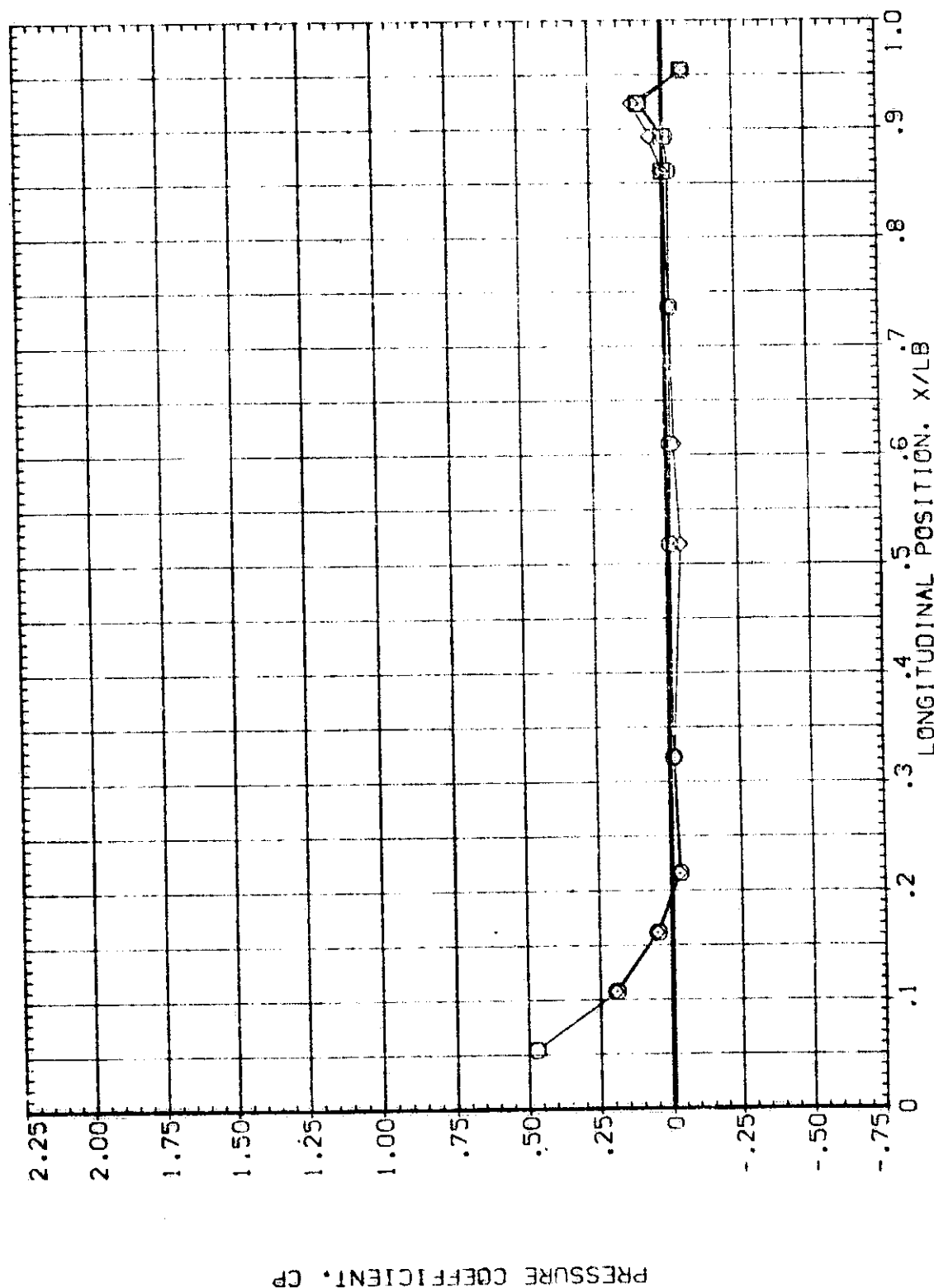


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A033)

SYMBOL  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 -.280

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 180.000  
 PHI

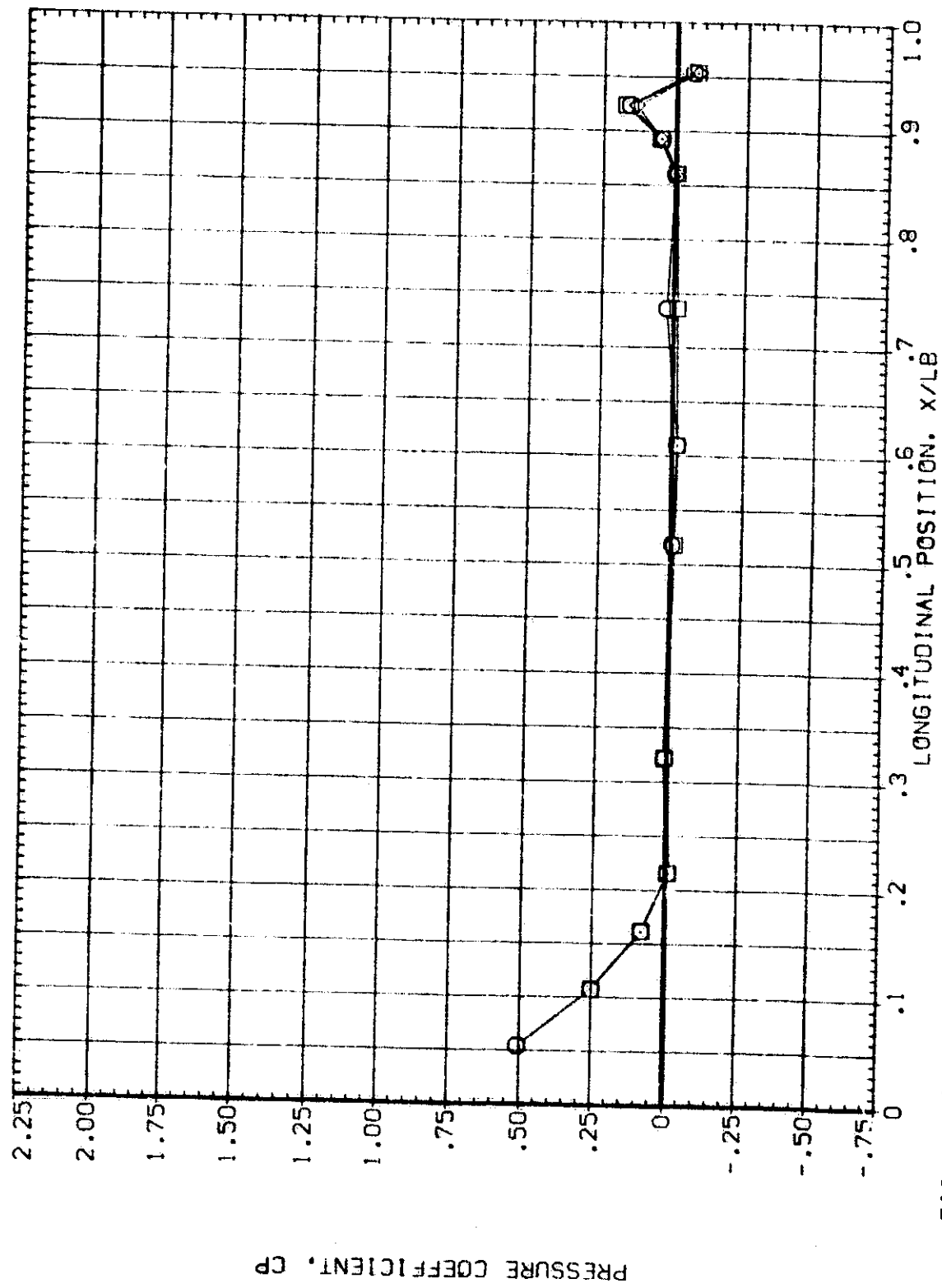


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA033)

SYMBOL

45.000  
67.500  
90.000

ALPHA  
-.280

MACH  
3.480

BETA  
MOUNT

.000  
1.000  
180.000

PARAMETRIC VALUES  
OFFSET  
PHI

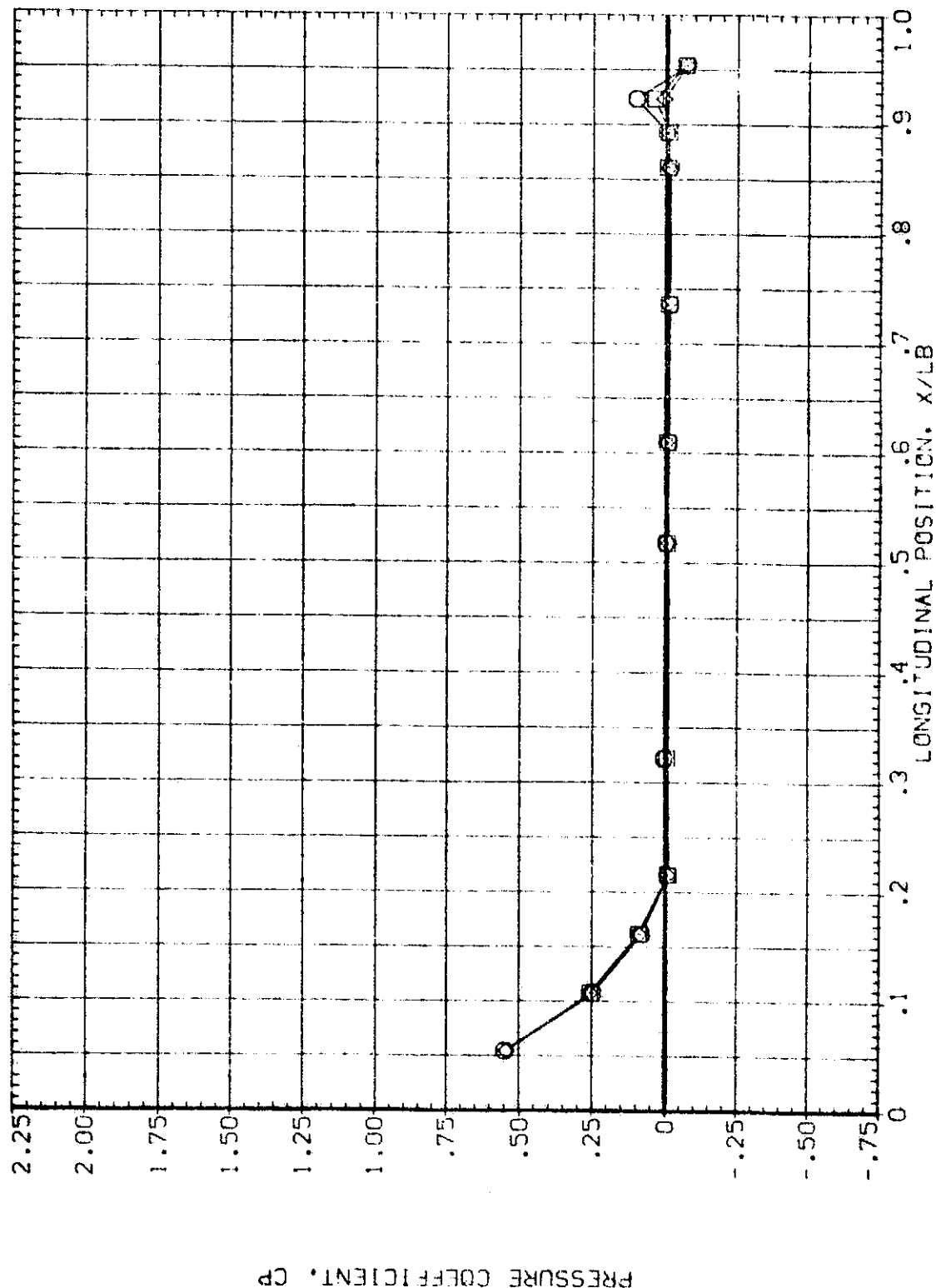


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL

THETA  
112.500  
135.000  
157.500

ALPHA  
-.280

MACH  
3.480

(P1A033)

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

.000  
180.000

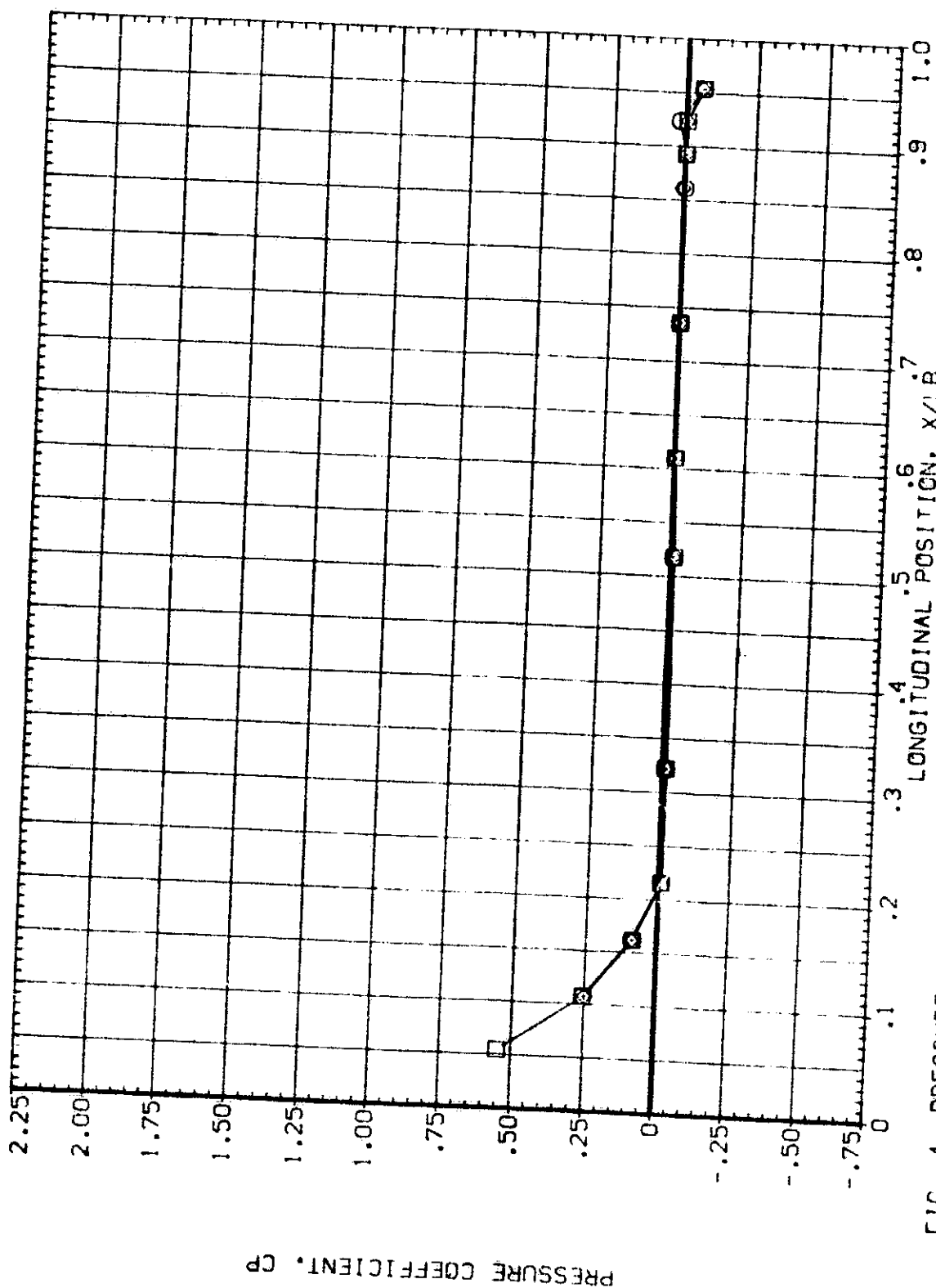


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	◇	◇	◇	◇
	140.000	232.500	225.000	
	ALPHA	MACH	BETA	PARAMETRIC VALUES
	-.280	3.480	MBUNT	.000 OFFSET 1.000 PHI 180.000

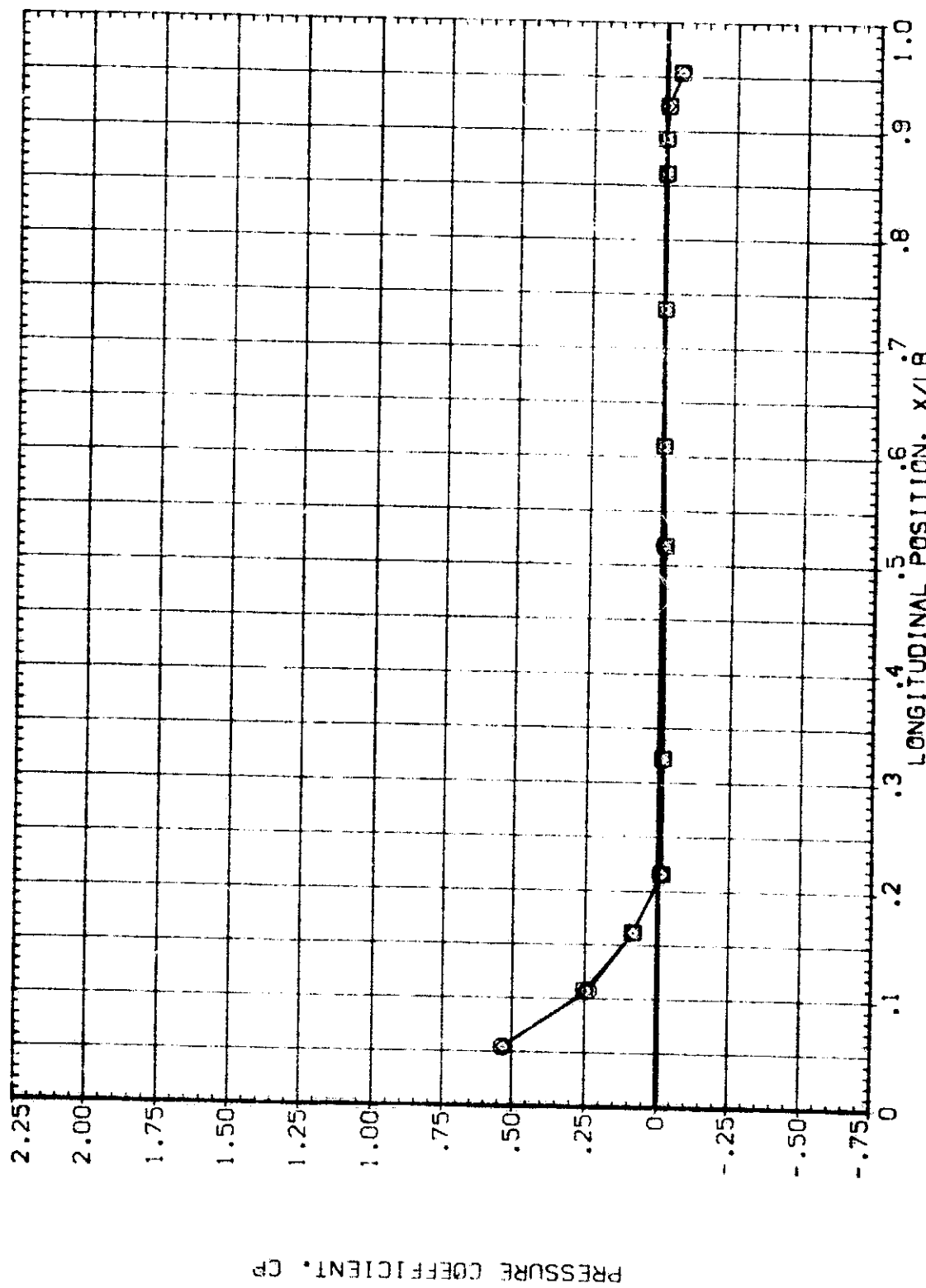


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A033)

SYMBOL  
 □  
 ◇

THETA 247.500  
 270.000  
 292.500  
 ALPHA -.280  
 MACH 3.480

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PH1  
 .000  
 180.000

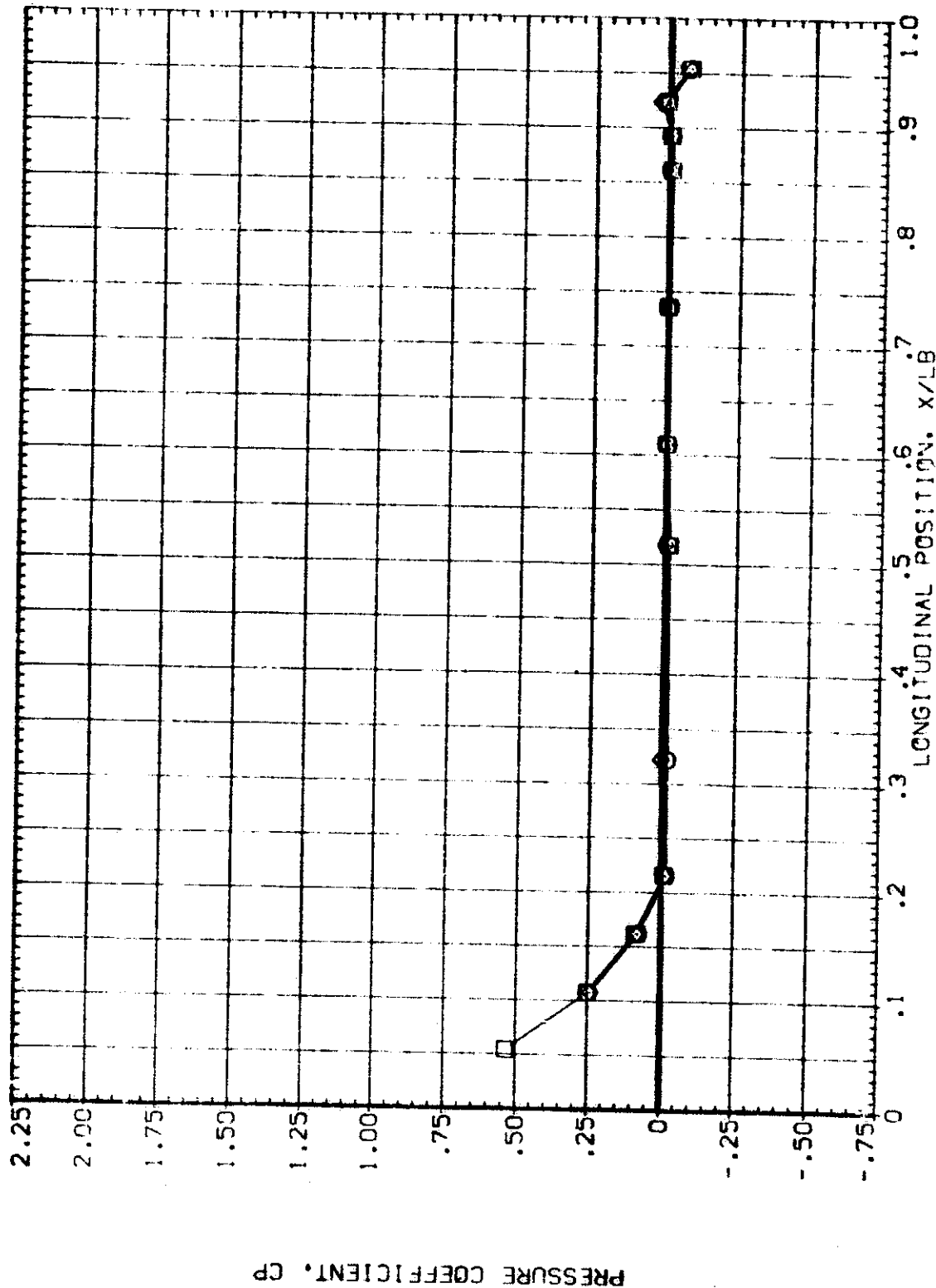


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL  
 ◊  
 ◯

THETA  
 315.000  
 326.000  
 345.000

ALPHA  
 -.280

MACH  
 3.480

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 180.000

BETA  
 MOUNT  
 PHI

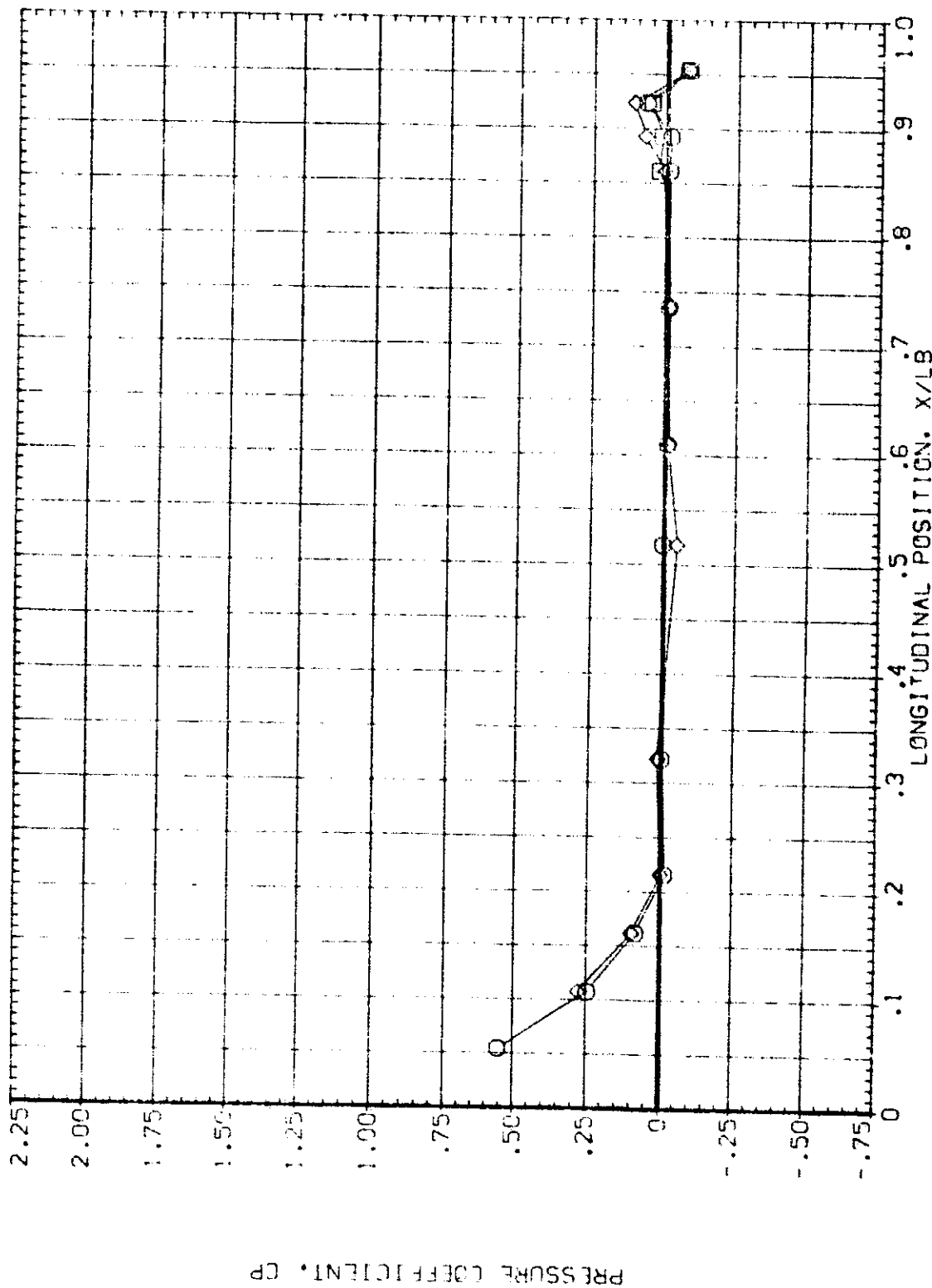


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A034)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES		
	.000	14.000	3.770	3.480	BETA	OFFSET	.000	1.000	.000
□					HOUNT	PHI			180.000
◇									

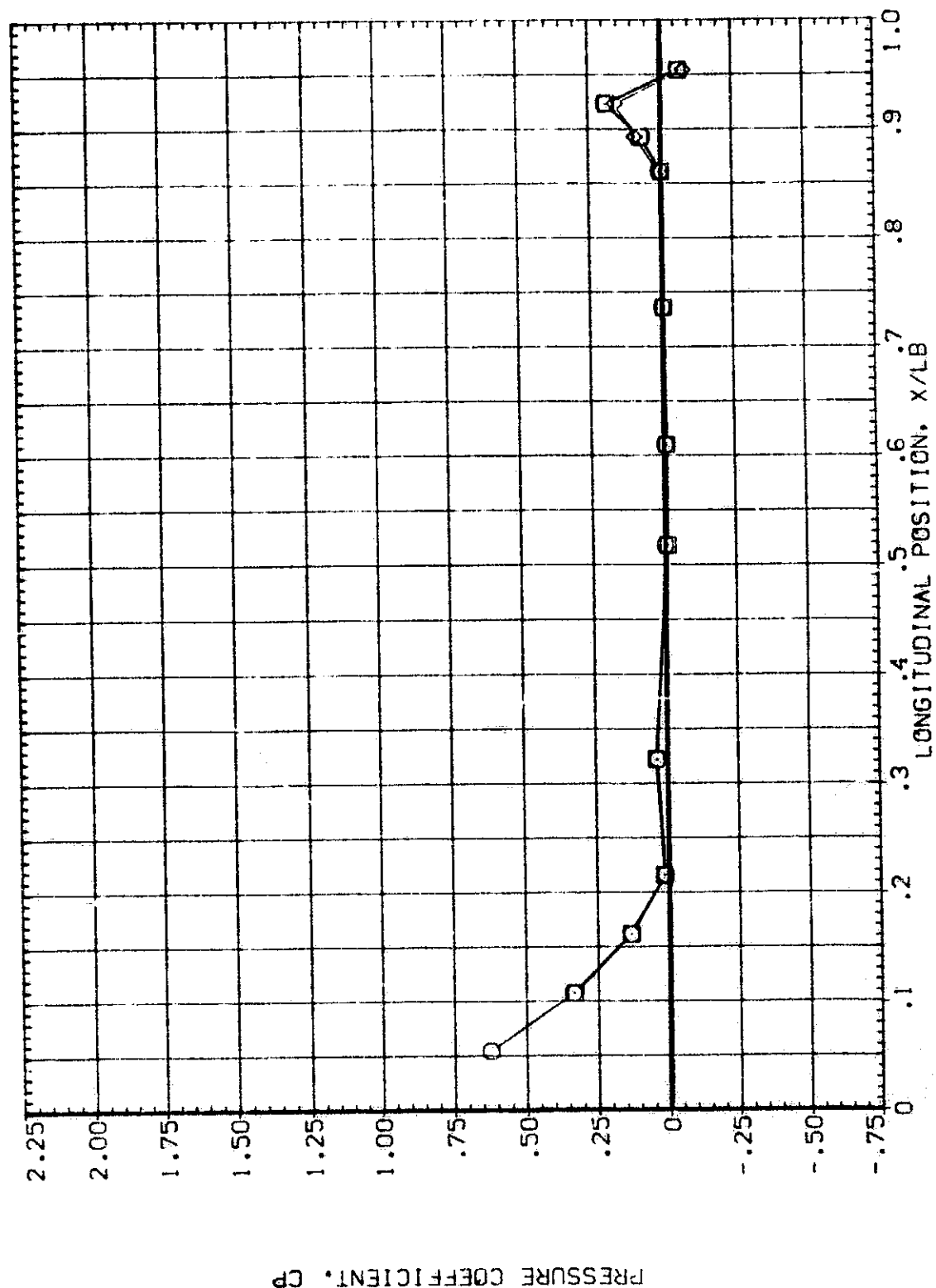


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A034)

SYMBOL  
 ◇  
 □  
 ◇

THETA 45.000  
 67.500  
 90.000

ALPHA 3.770  
 3.480

MACH 3.480

PARAMETRIC VALUES  
 .000 .000 .000  
 BETA OFFSET  
 MOUNT PHI 1.000 180.000

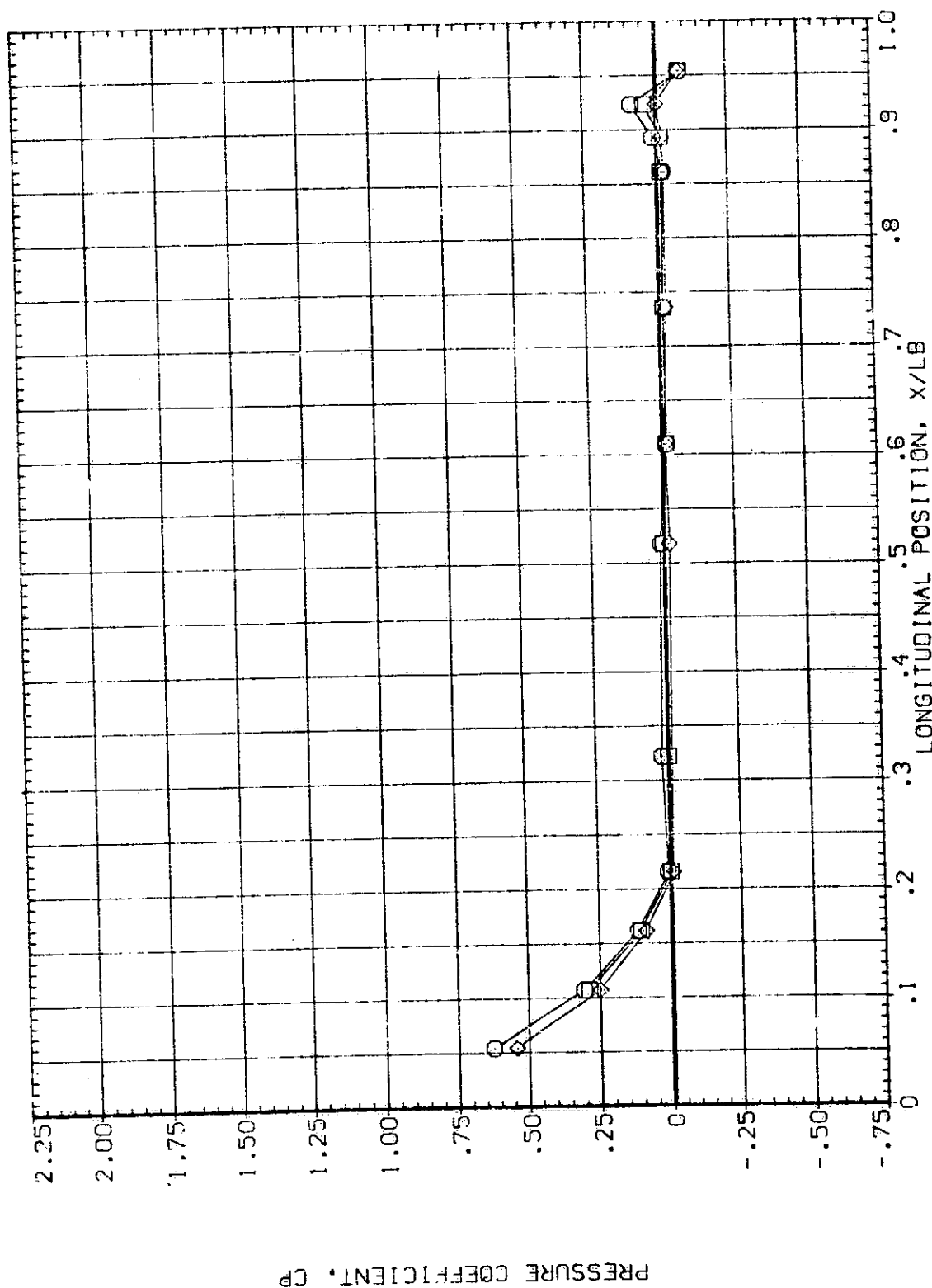


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA034)

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	112.500	3.770	3.480	MOUNT	.000 OFFSET
□	135.000				1.000 PHI
◇	157.500				180.000

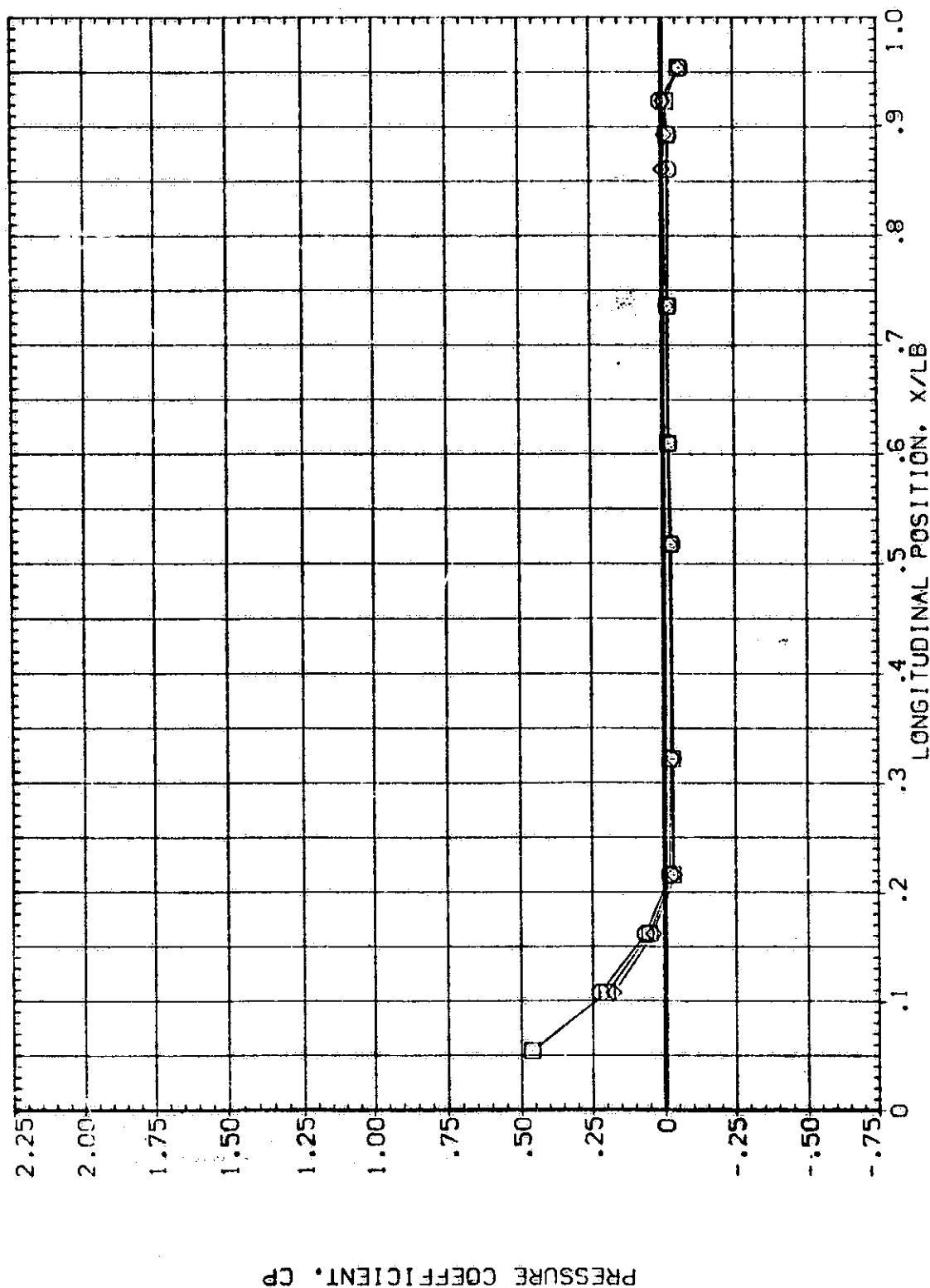


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA034)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	180.000	202.500	3.770	3.480	BETA	MCJNT	.000	OFFSET	.000	PHI
	225.000						1.000		180.000	

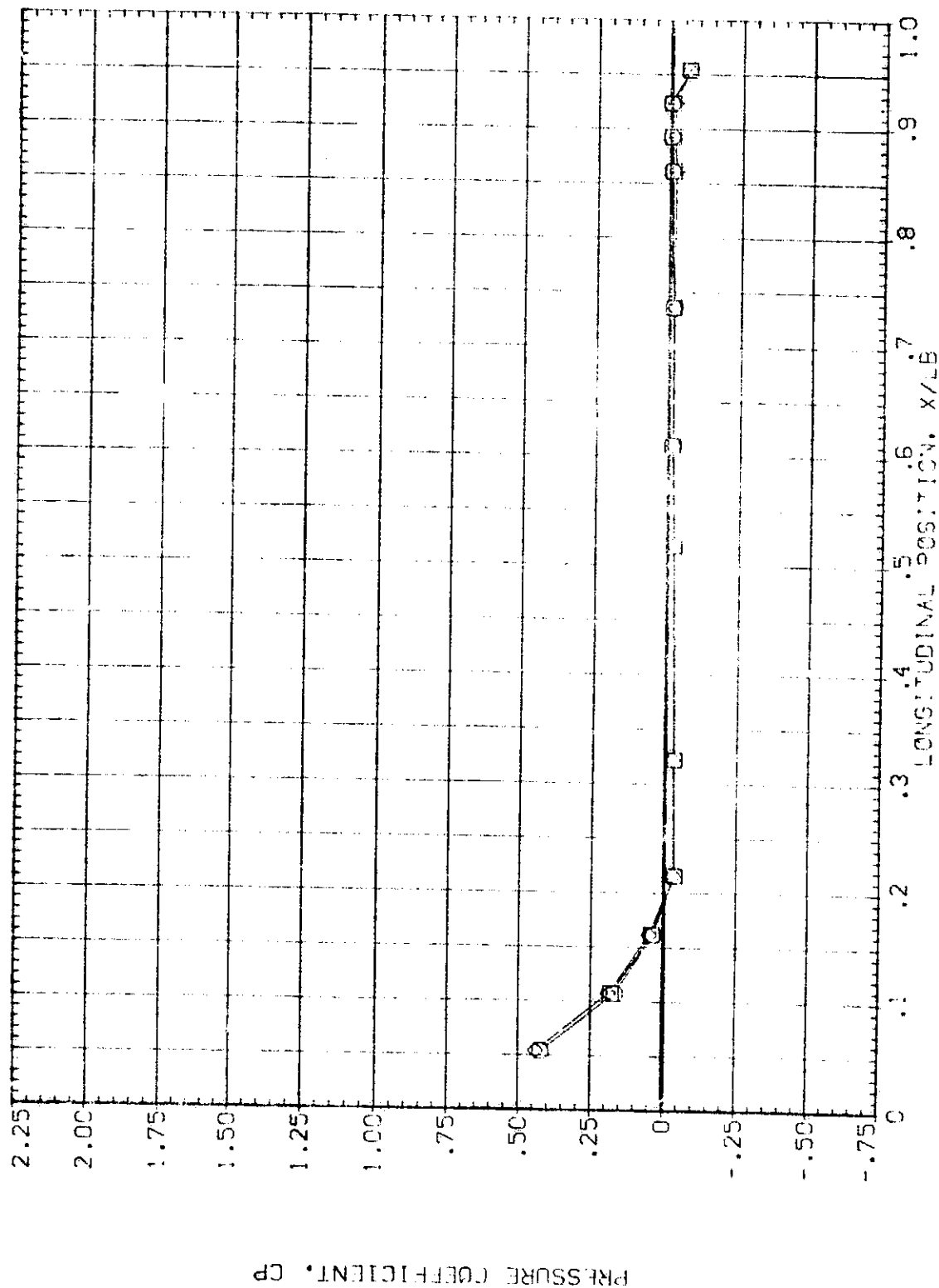


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A034)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	
□	247.500	3.770	3.480	MDUNT	.000	.000
◇	270.000				1.000	180.000
◇	292.500					

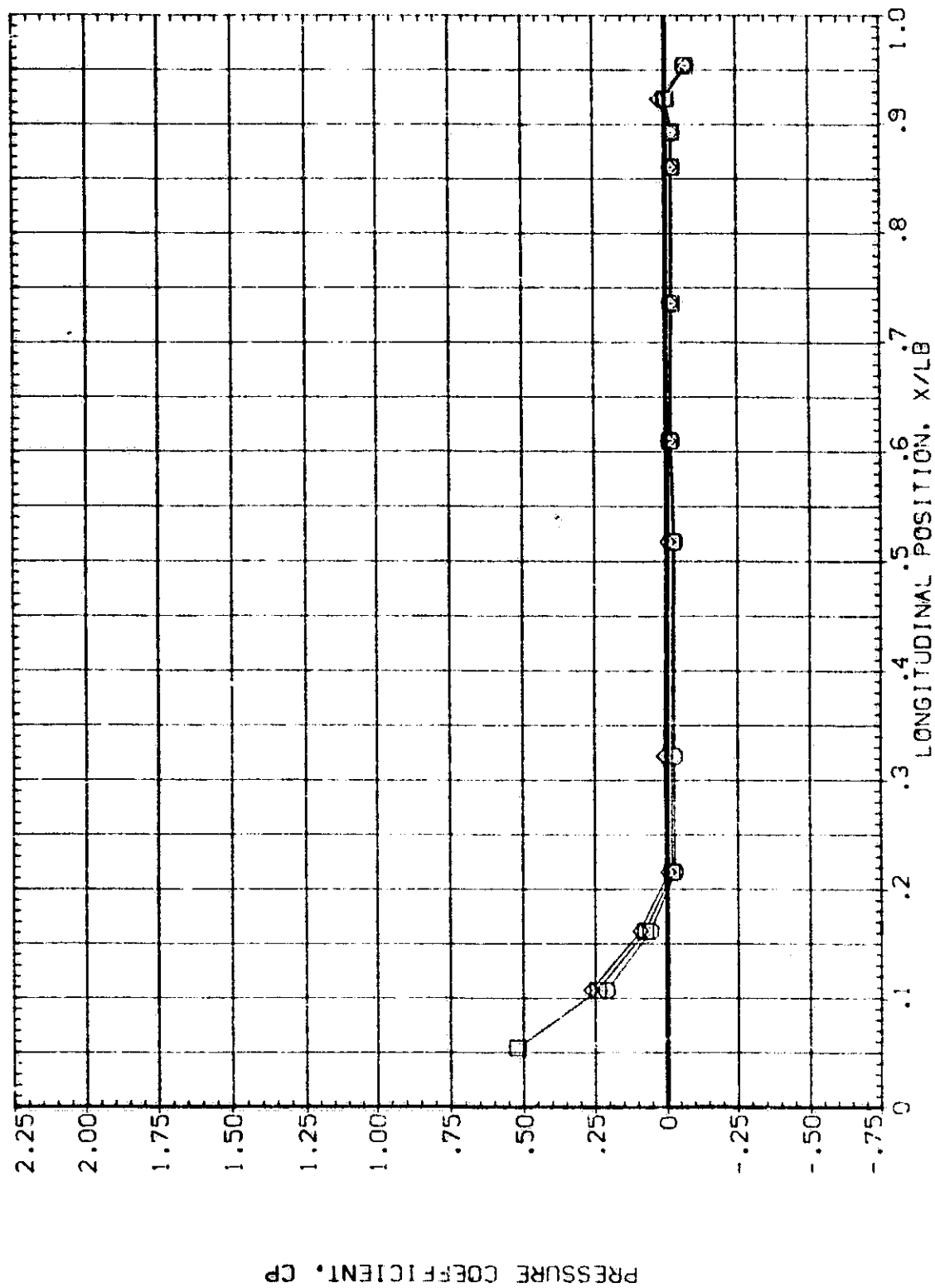


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES	
○	315.000	3.770	3.480	MOUNT	.000	
□	326.000				OFFSET	
◇	346.000				PHI	
						180.000

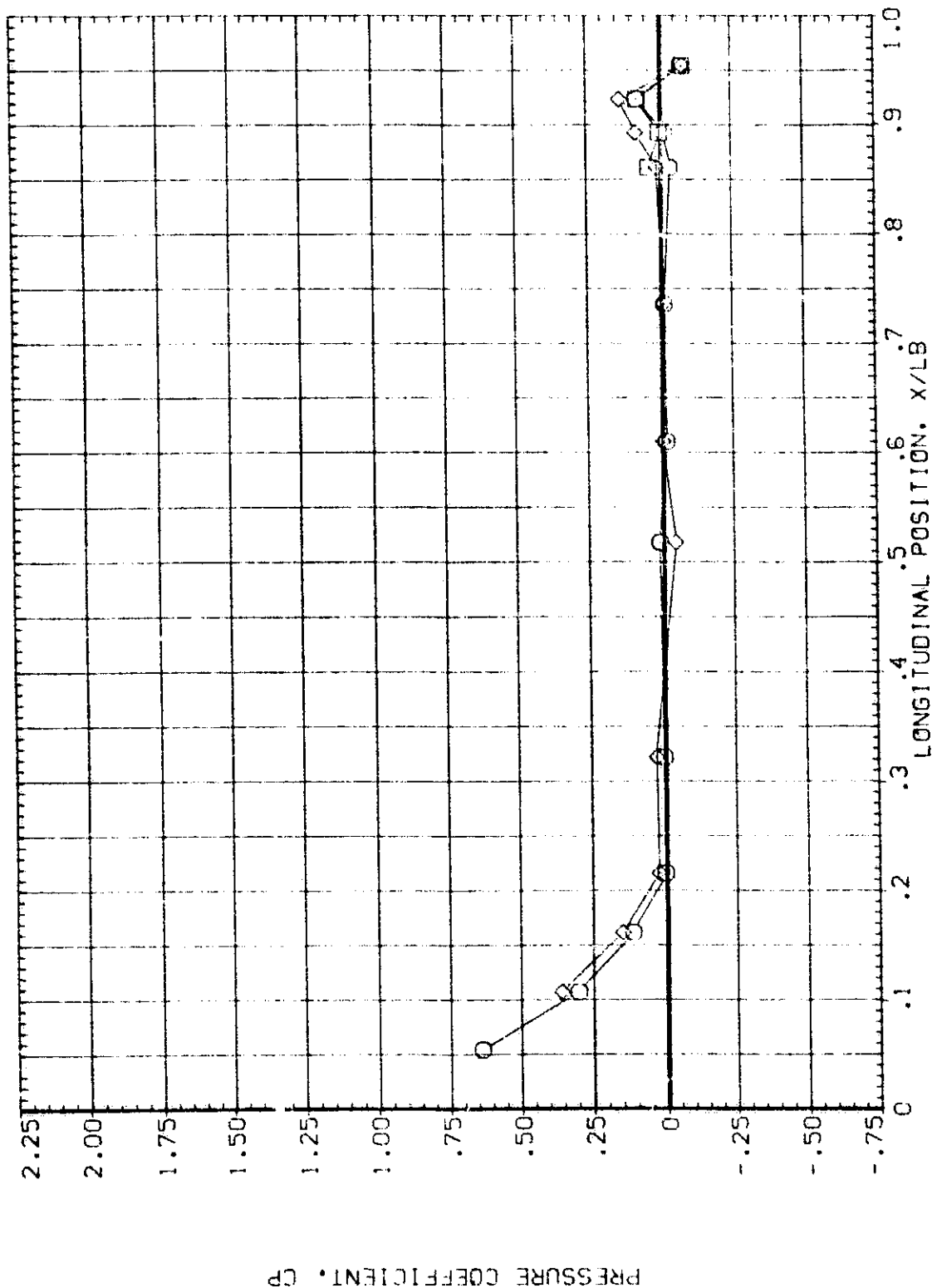


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A035)

SYMBOL  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 7.800

MACH  
 3.480

PARAMETRIC VALUES  
 BETA  
 MOUNT

OFFSET  
 PHI

.000  
 1.000  
 180.000

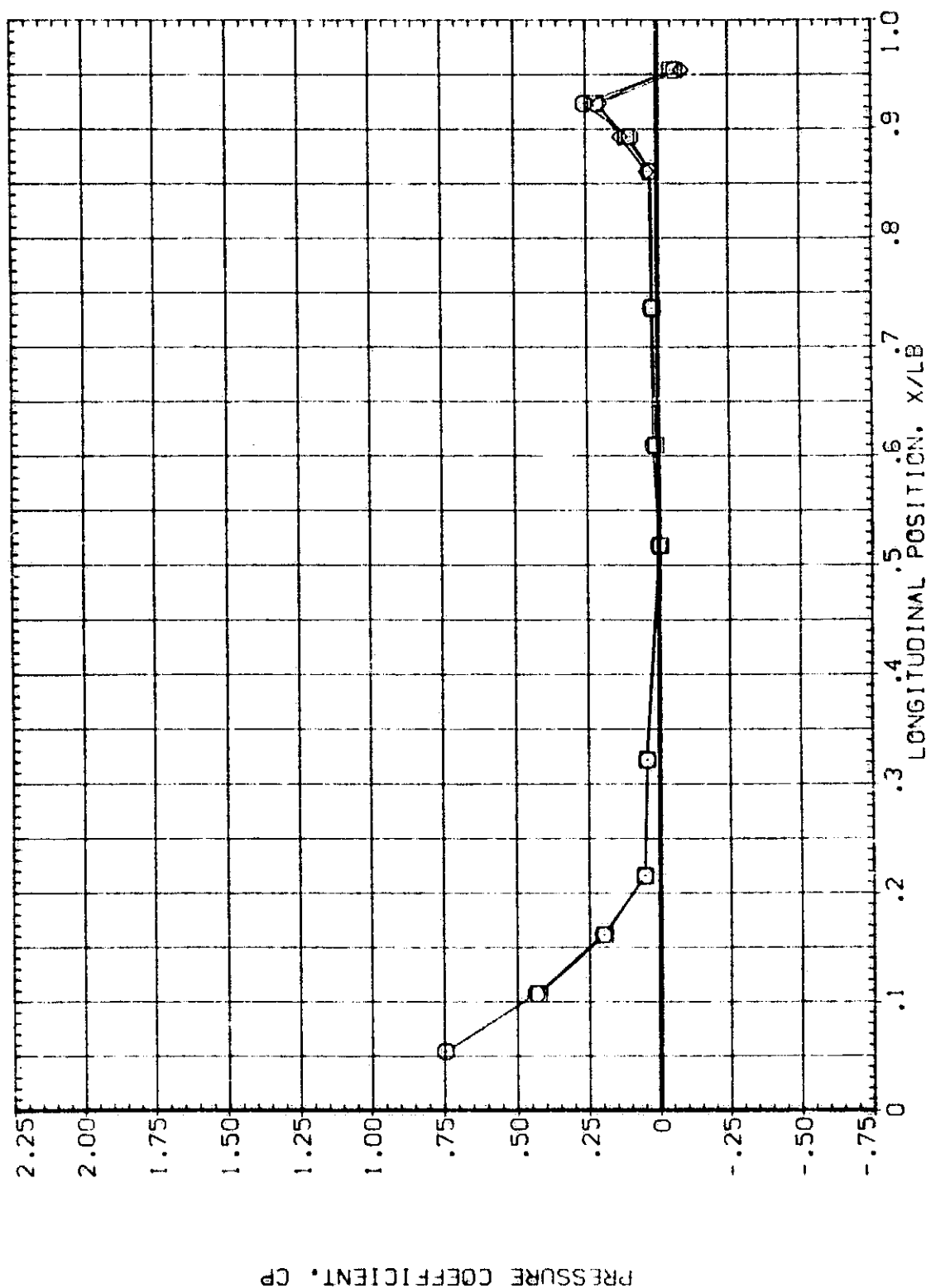


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA035)

PARAMETRIC VALUES  
 .000 .000 .000  
 1.000 1.000 1.000  
 PHI

BETA  
 MOUNT

MACH  
 3.480

ALPHA  
 7.800

THETA  
 45.000  
 67.500  
 90.000

SYMBOL  
 ○  
 □  
 ◇

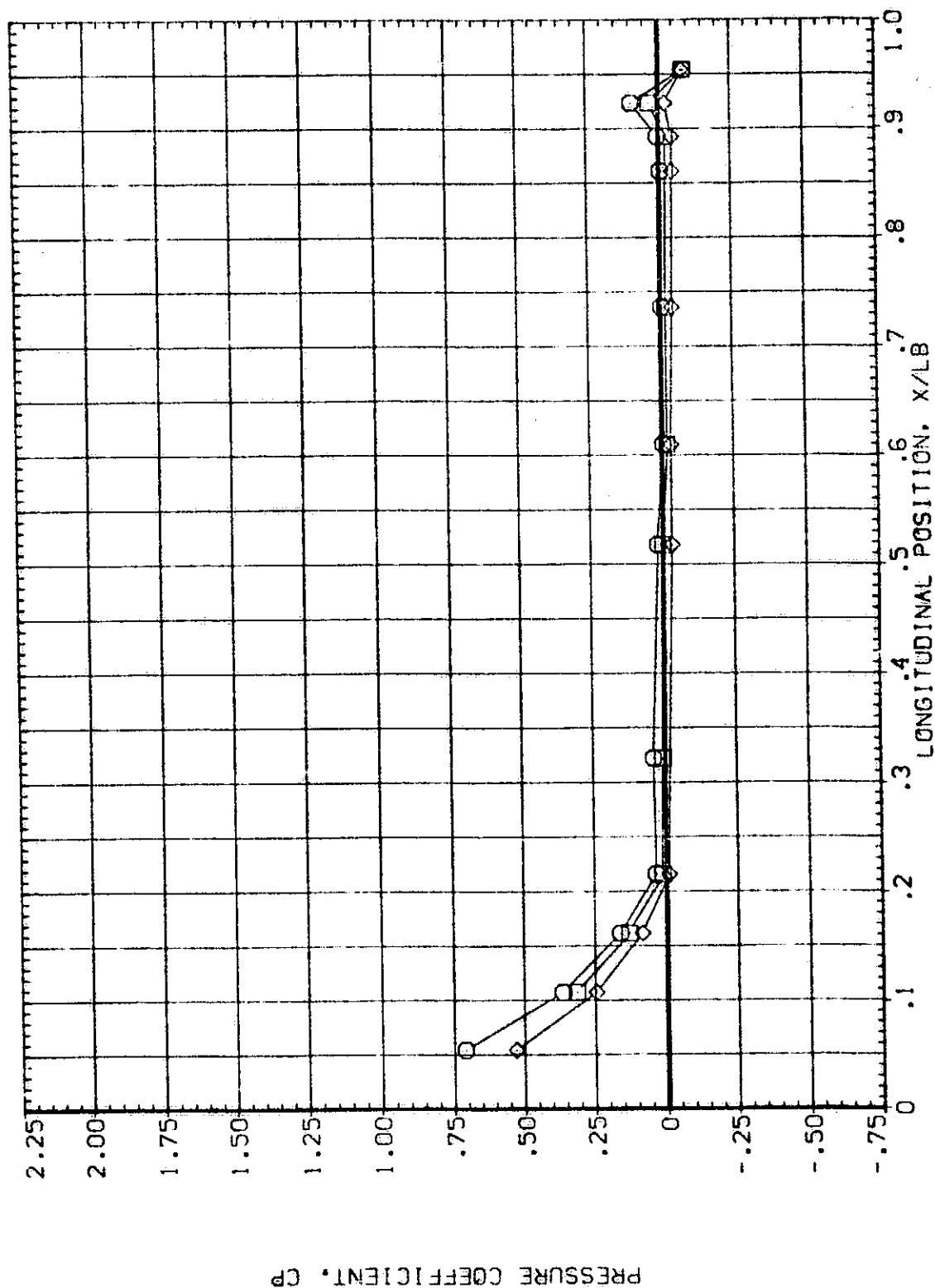


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 595 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A035)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	112.500	7.800	3.480	MOUNT	1.000	180.000
◇	135.000					
◇	157.500					

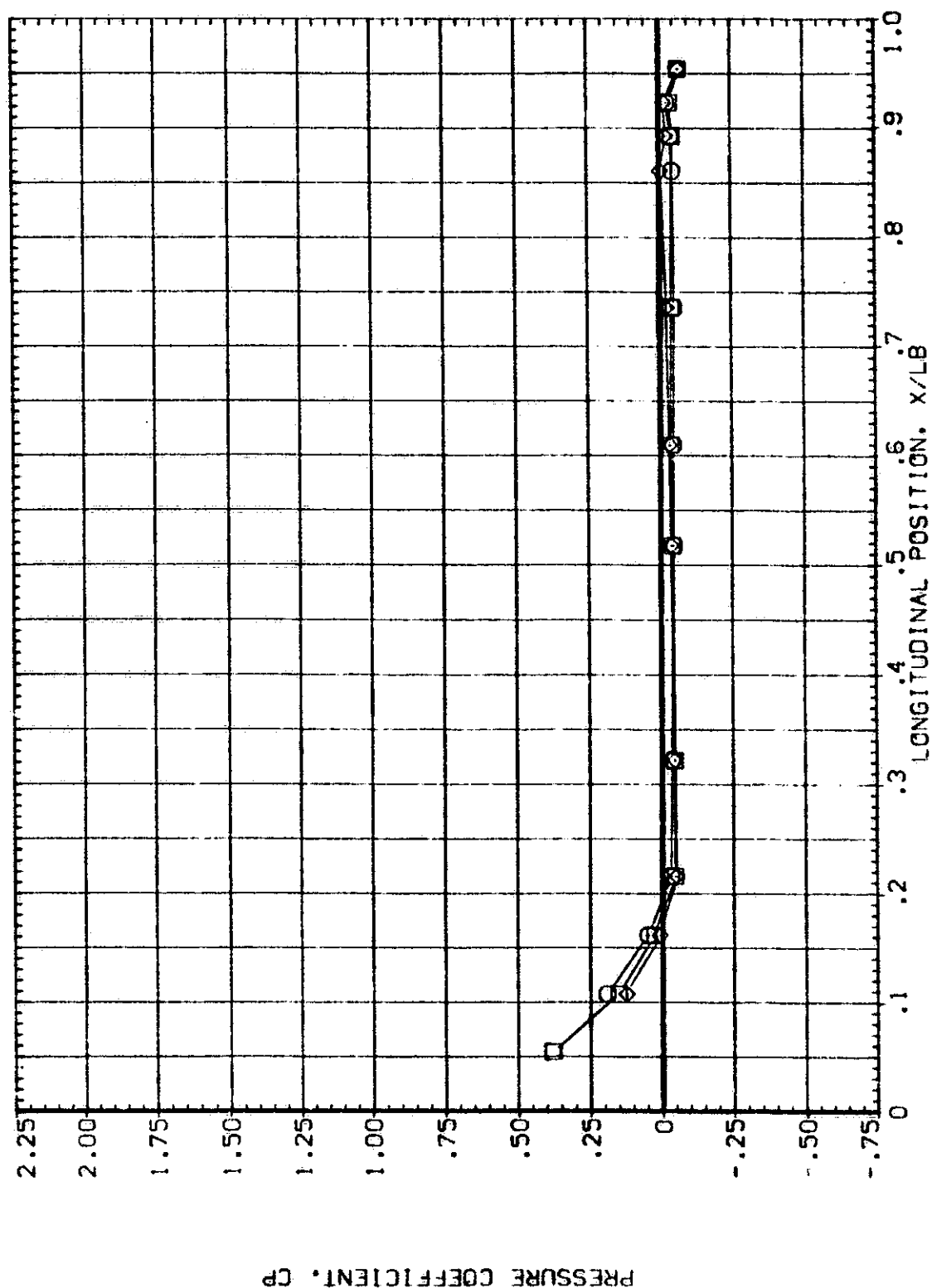


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

SYMBOL  
 □  
 ◇

THETA  
 180.000  
 202.500  
 225.000

ALPHA  
 7.800

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI  
 180.000

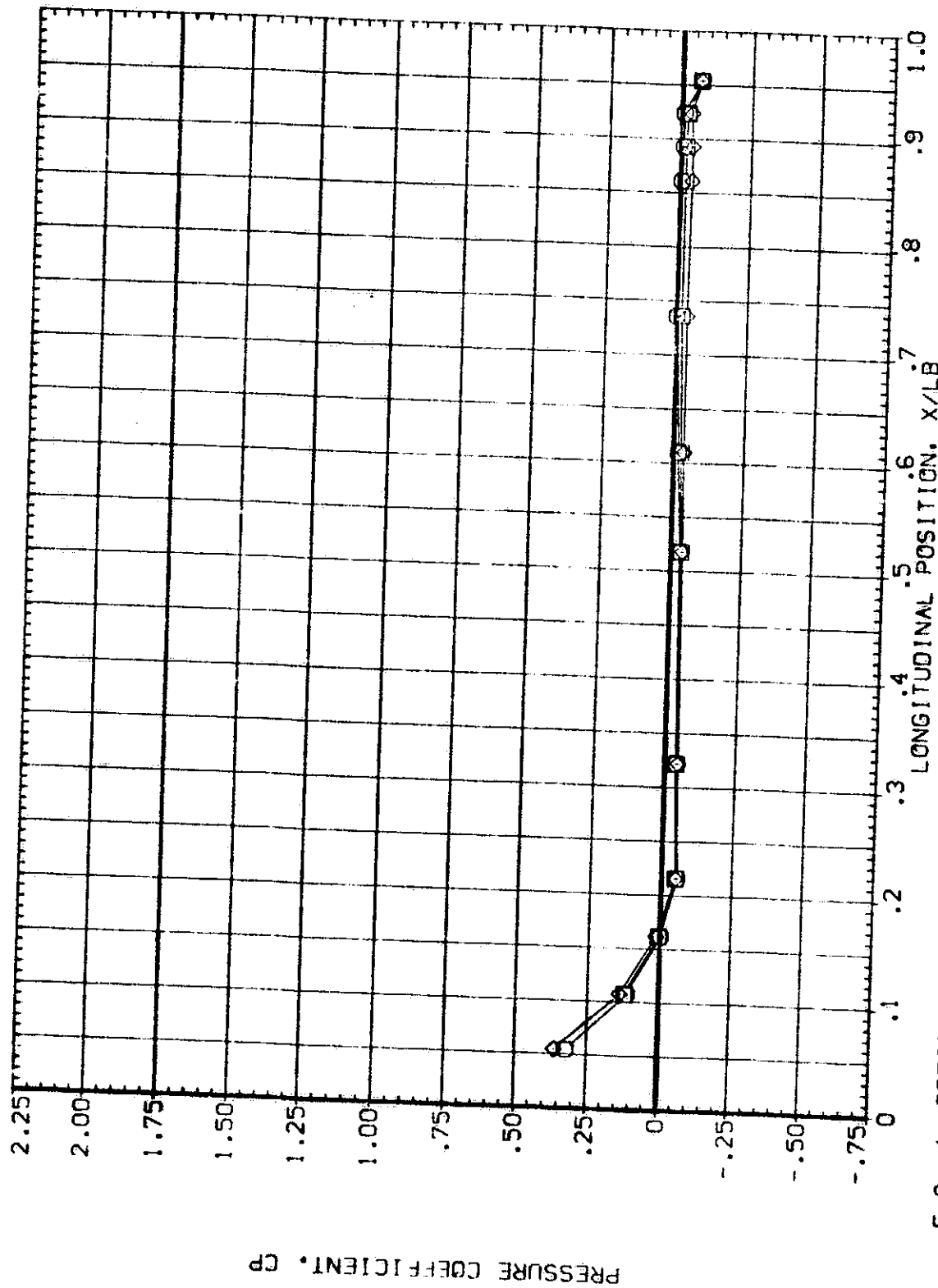


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A035)

SYMBOL THETA  
 ○ 247.500  
 □ 270.000  
 ◇ 292.500

ALPHA 7.800  
 MACH 3.480

BETA  
 MIDUNT  
 PARAMETRIC VALUES  
 .000 1.000 PHI  
 .000 180.000

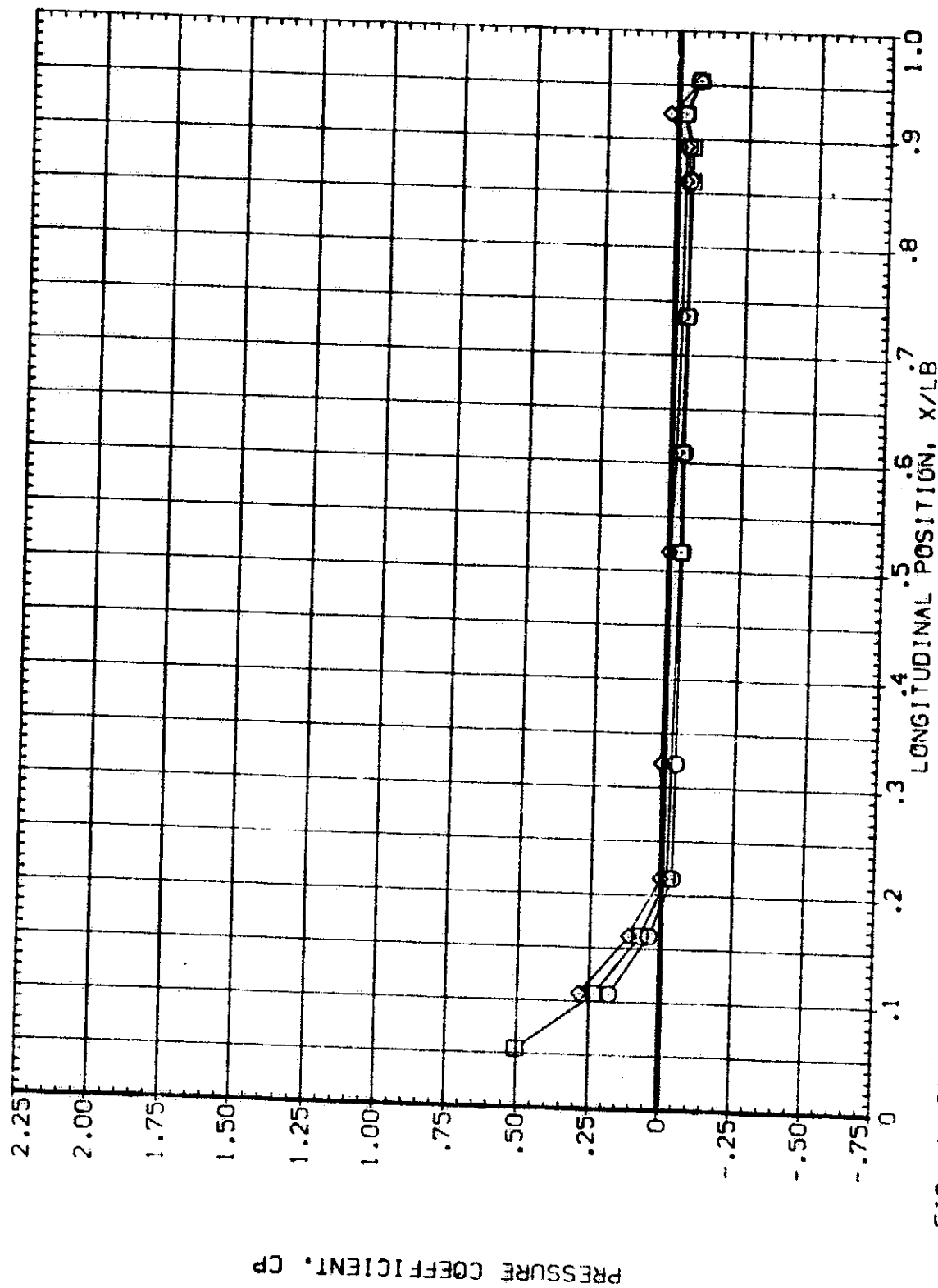


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	7.800	3.480	MOUNT	.000 OFFSET .000
◇	326.000				1.000 PHI 180.000
◇	346.000				

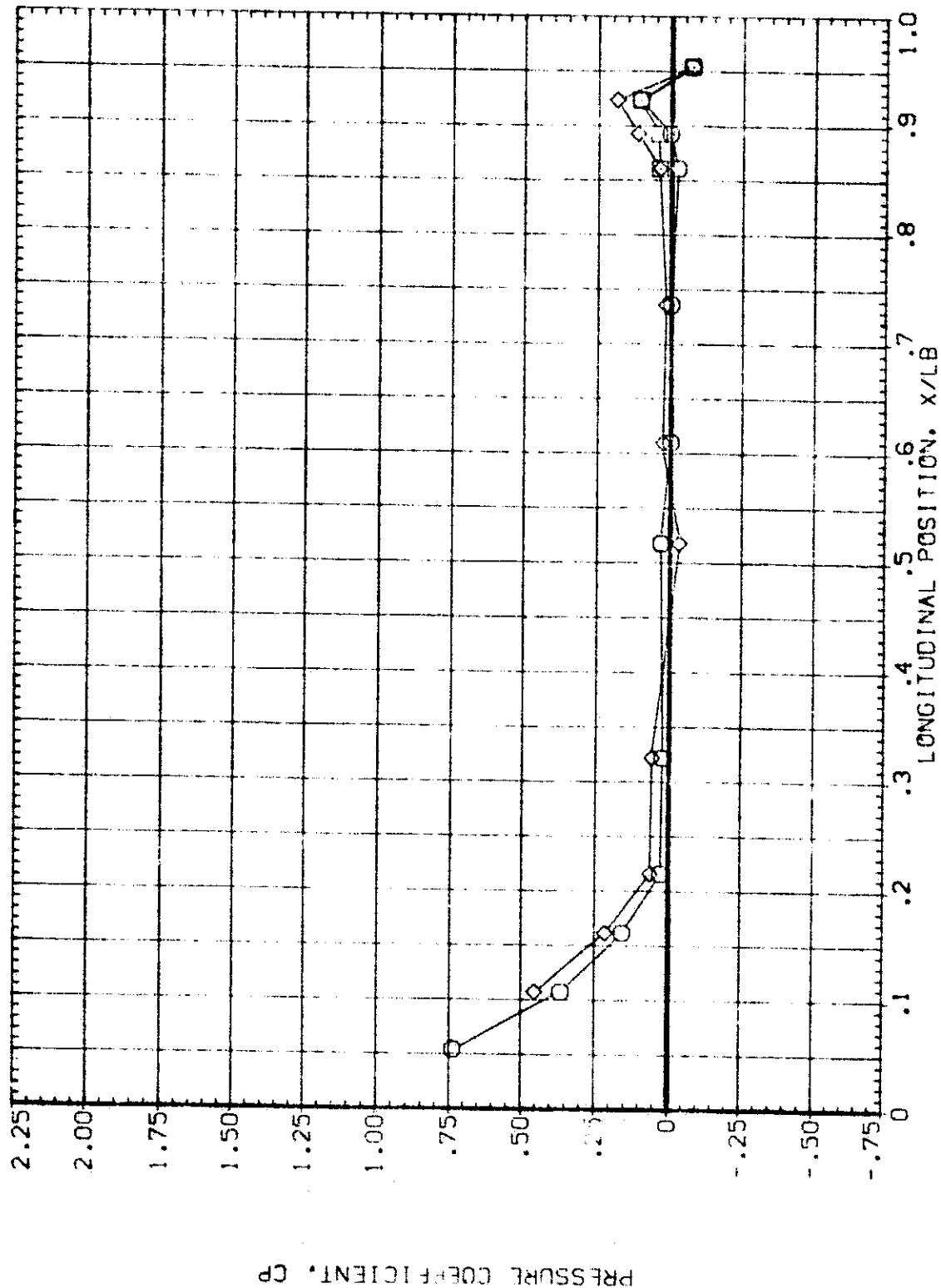


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA036)

SYMBOL THETA ALPHA MACH  
 O .000 12.540 3.480  
 □ 14.000  
 ◇ 24.000

PARAMETRIC VALUES  
 BETA .000 20.000  
 MOUNT 1.000 PH1 180.000

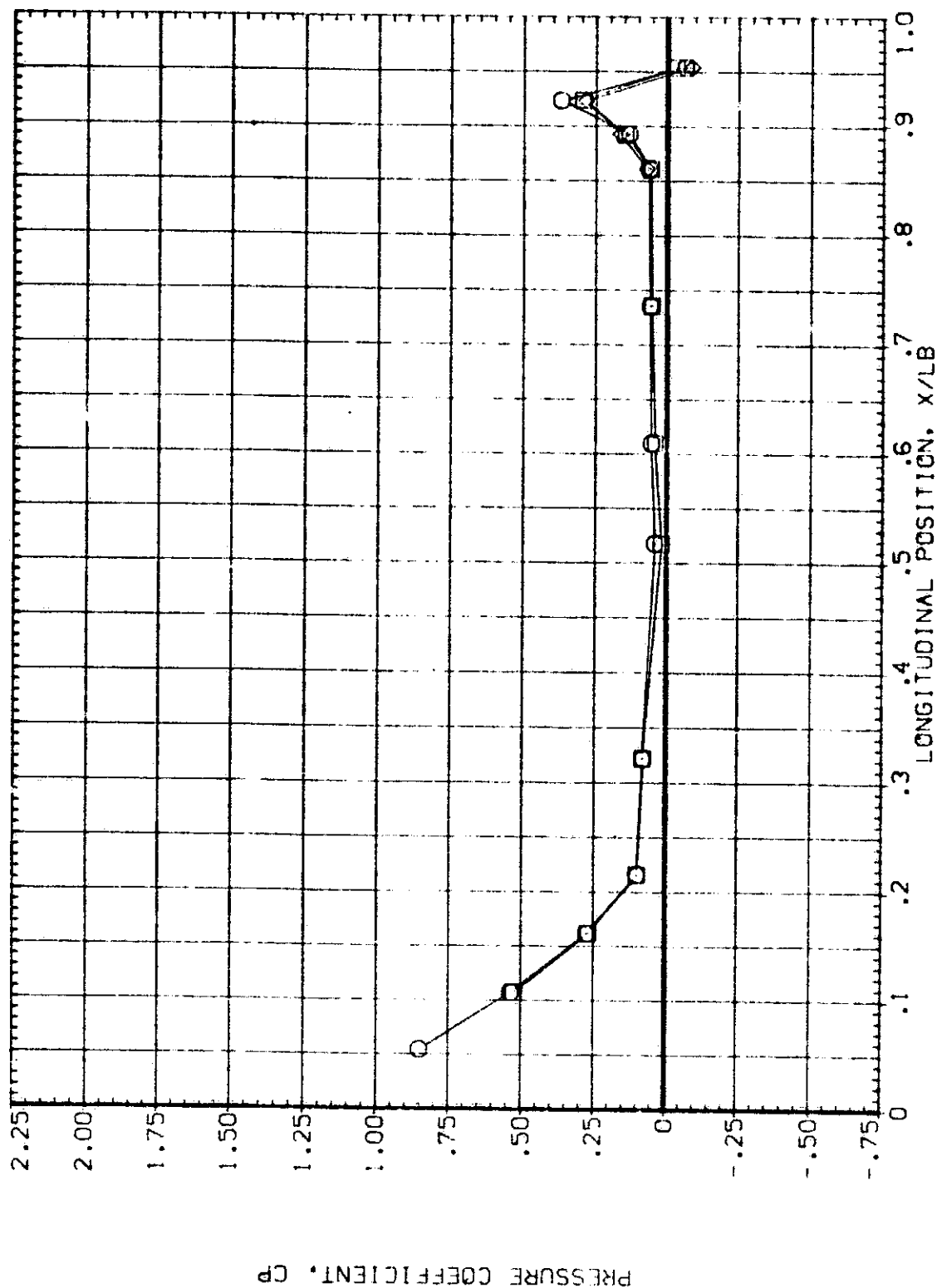


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A036)

SYMBOL  
 ○  
 □  
 ◇

THETA ALPHA MACH  
 45.030 12.540 3.480  
 67.530  
 90.030

PARAMETRIC VALUES  
 BETA .000 20.000  
 MOUNT 1.000 PHI 180.000

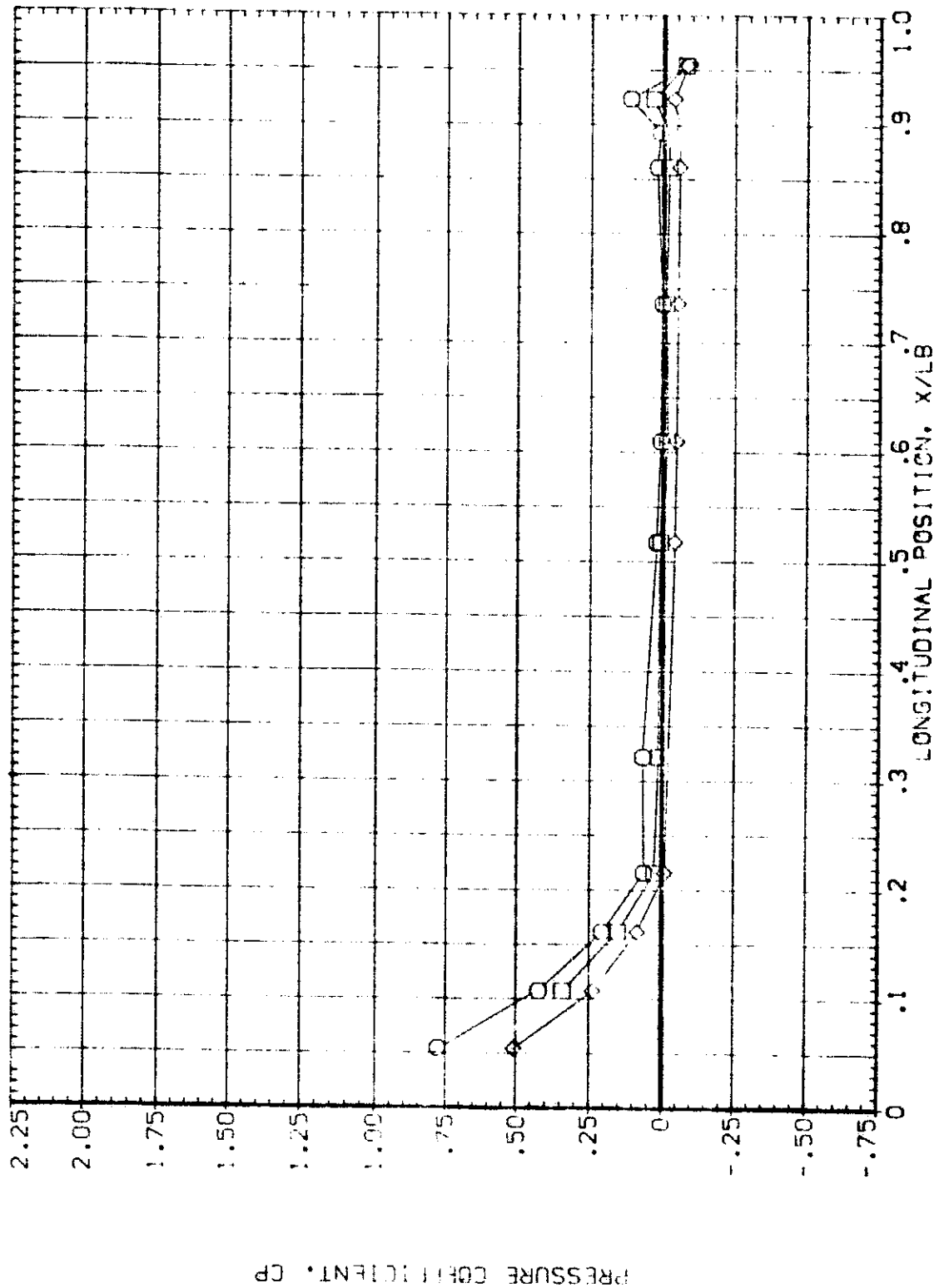


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A036)

SYMBOL THETA ALPHA "ACH  
 O 112.500 12.540 3.480  
 □ 135.000  
 ◇ 157.500

BETA MOUNT  
 1.000  
 .000  
 .000  
 20.000  
 180.000

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 .000  
 .000

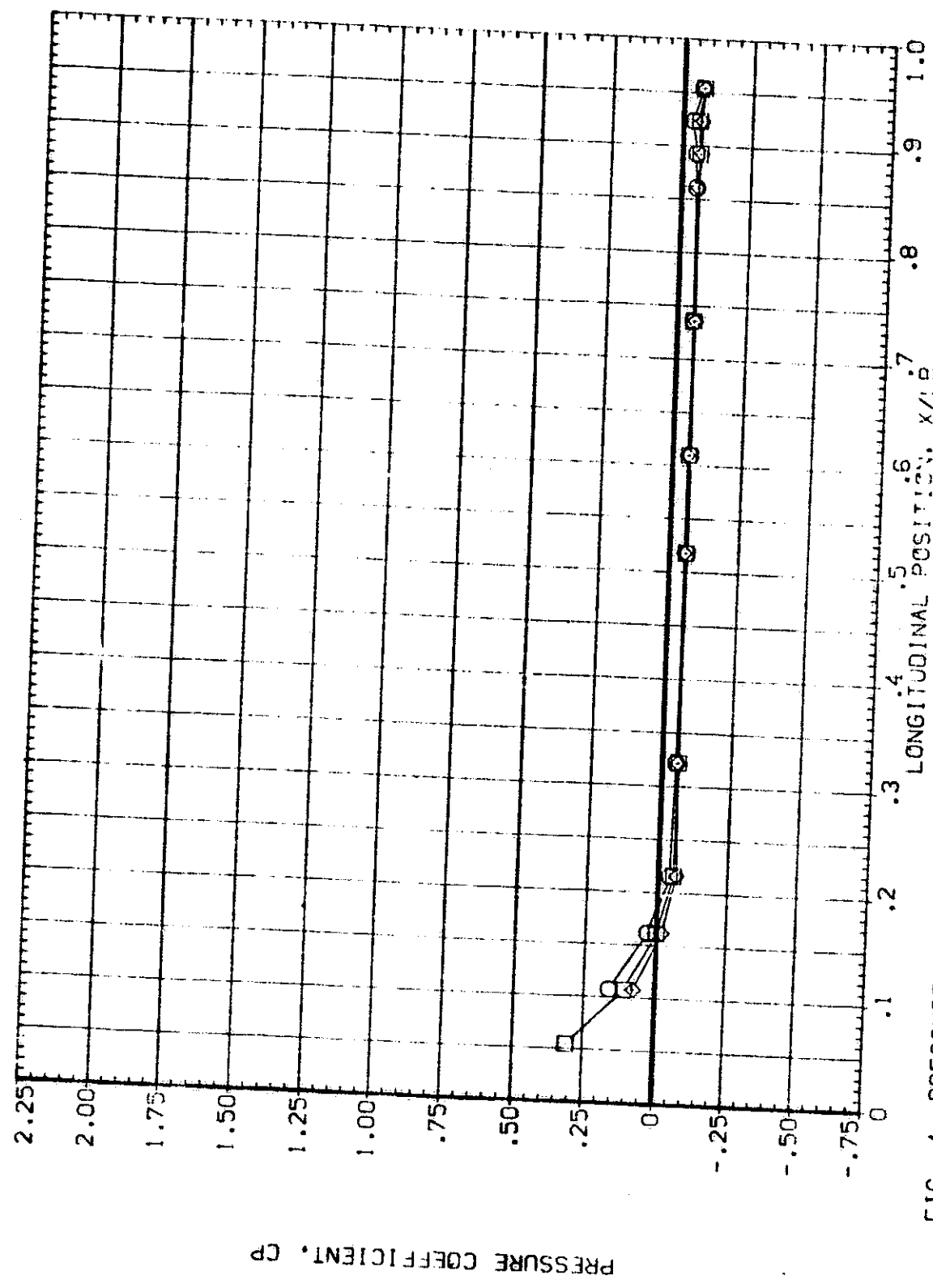


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL

180.000  
202.500  
225.000

THETA  
ALPHA  
12.540

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT  
1.000  
1.000  
20.000  
180.000

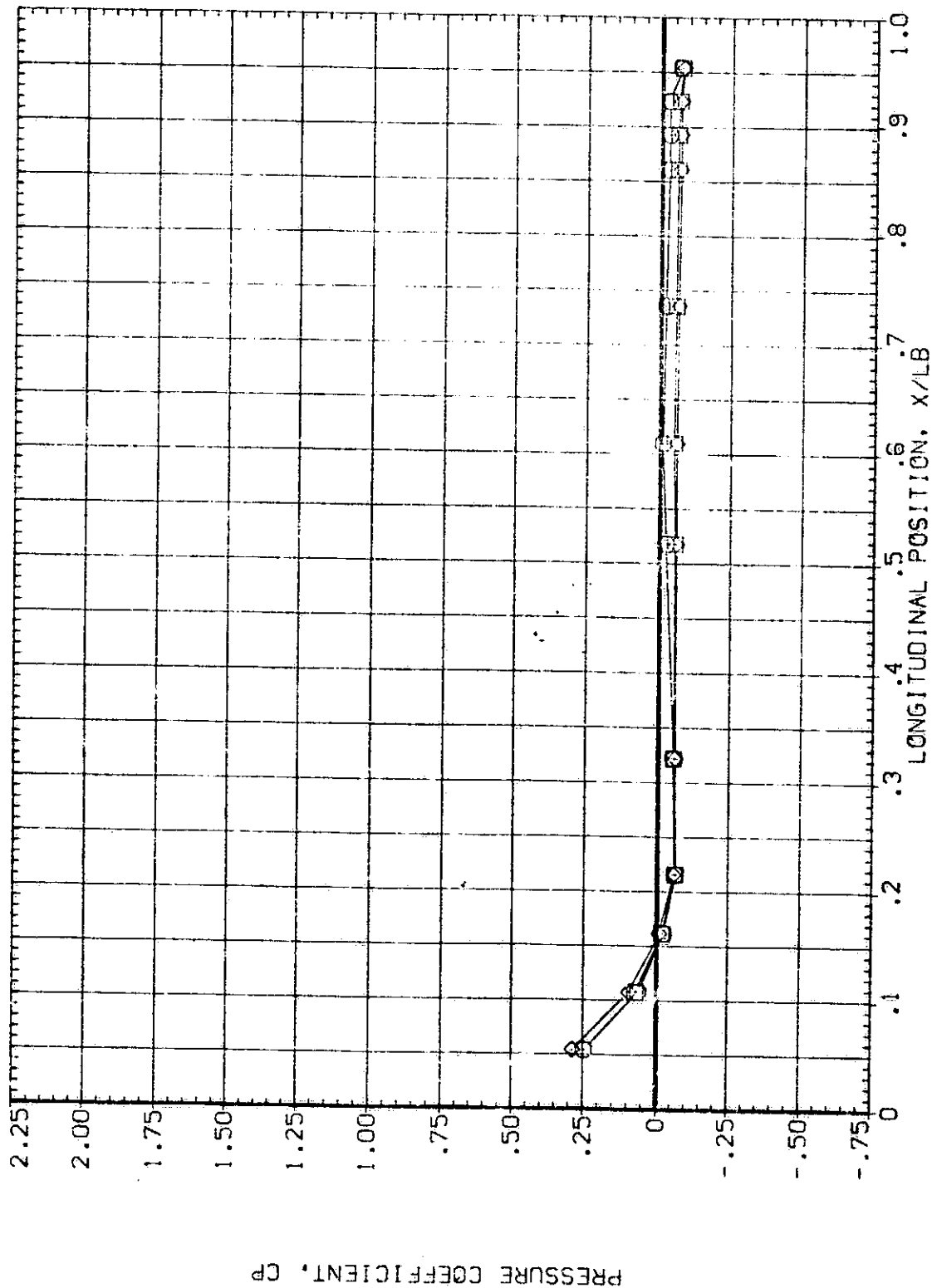


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1

(PIA036)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
12.540

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

20.000  
180.000

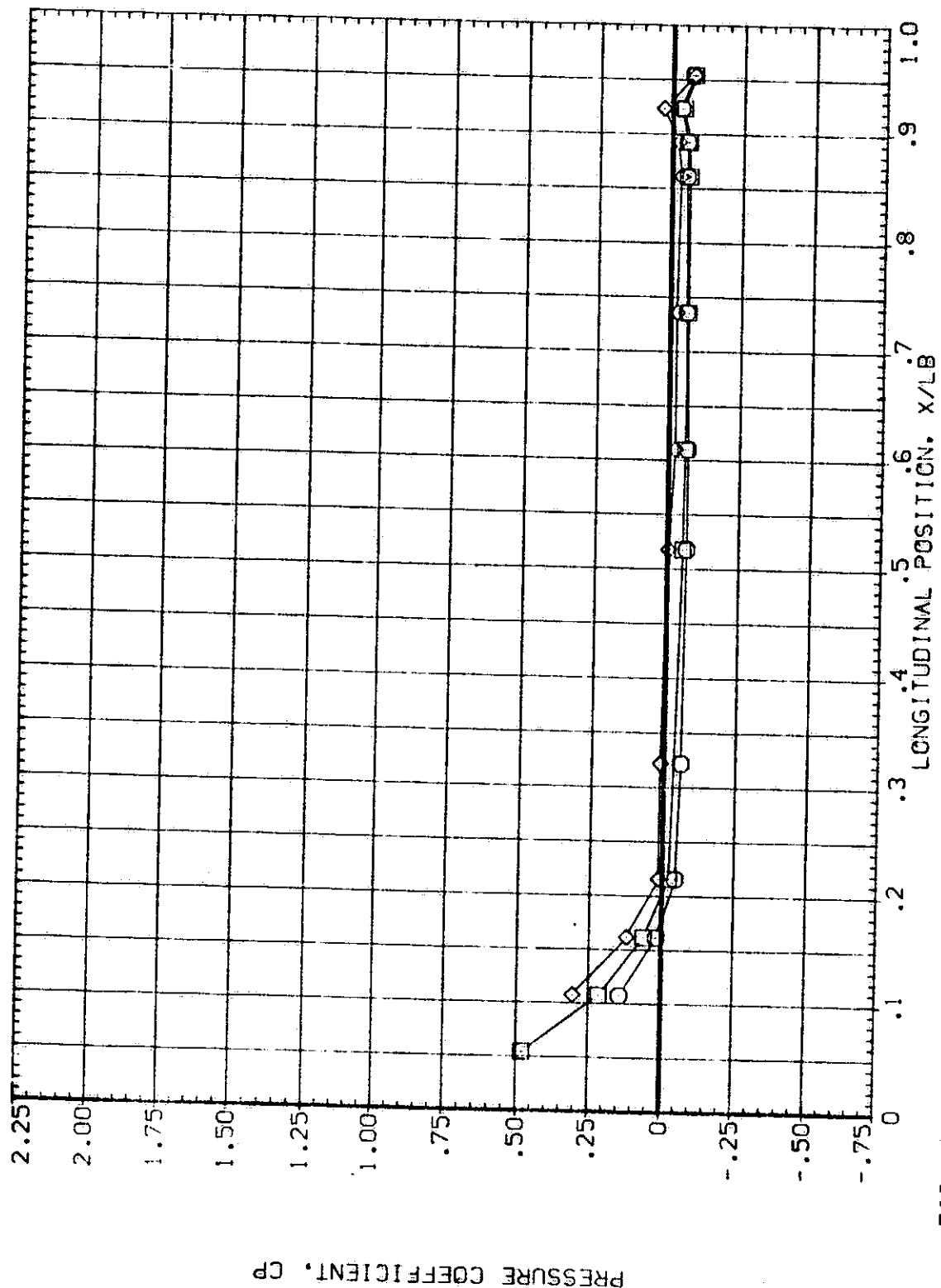


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	12.540	3.480	MOUNT	.000 OFFSET
□	326.000				1.000 PHI
◇	346.000				20.000
					180.000

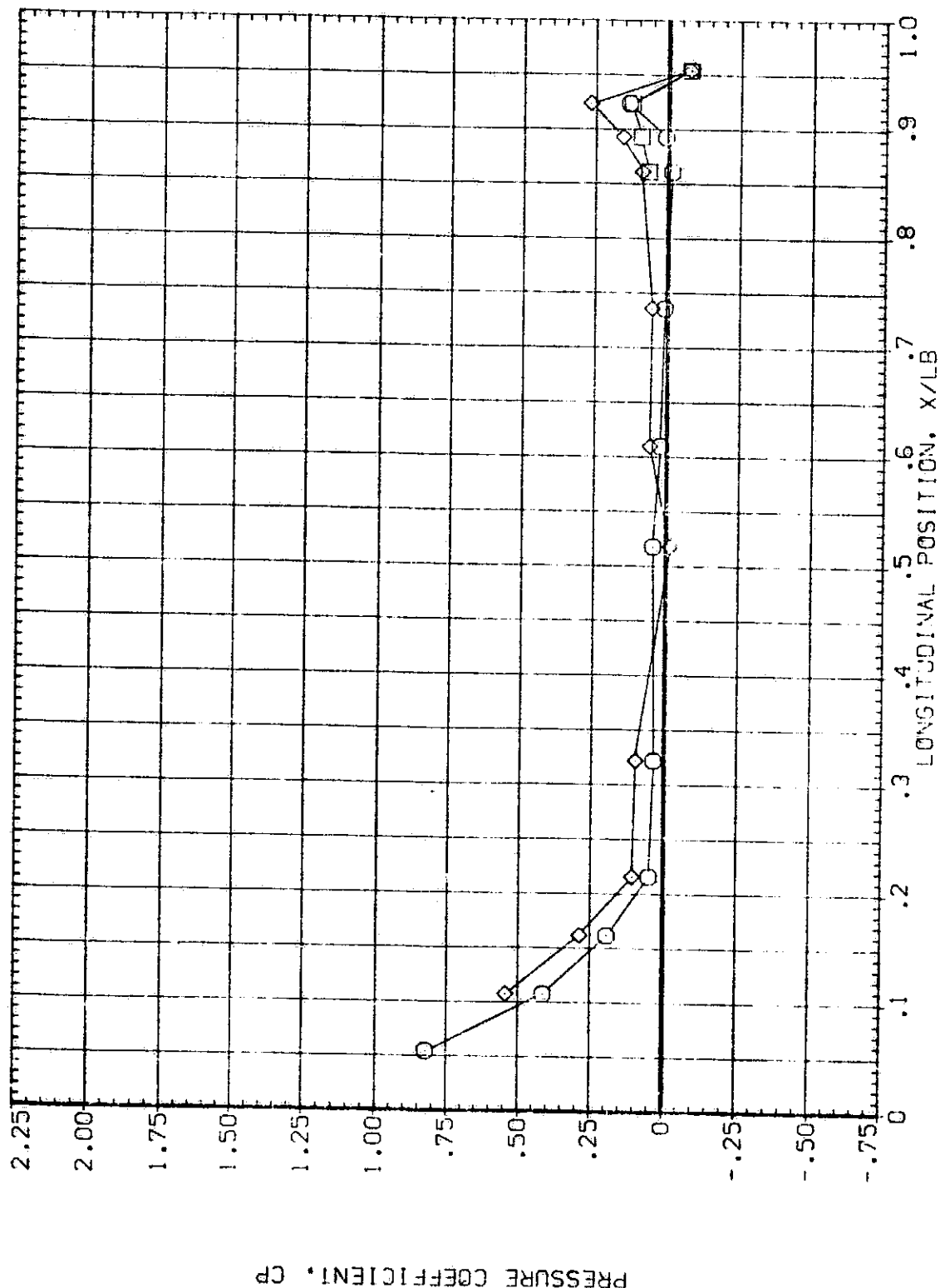


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A037)

SYMBOL  
 ○  
 □  
 ◇

THE TA ALPHA MACH  
 .000 16.550 3.480  
 14.000  
 24.000

PARAMETRIC VALUES  
 BETA .000 20.000  
 MOUNT 1.000 PHI 180.000

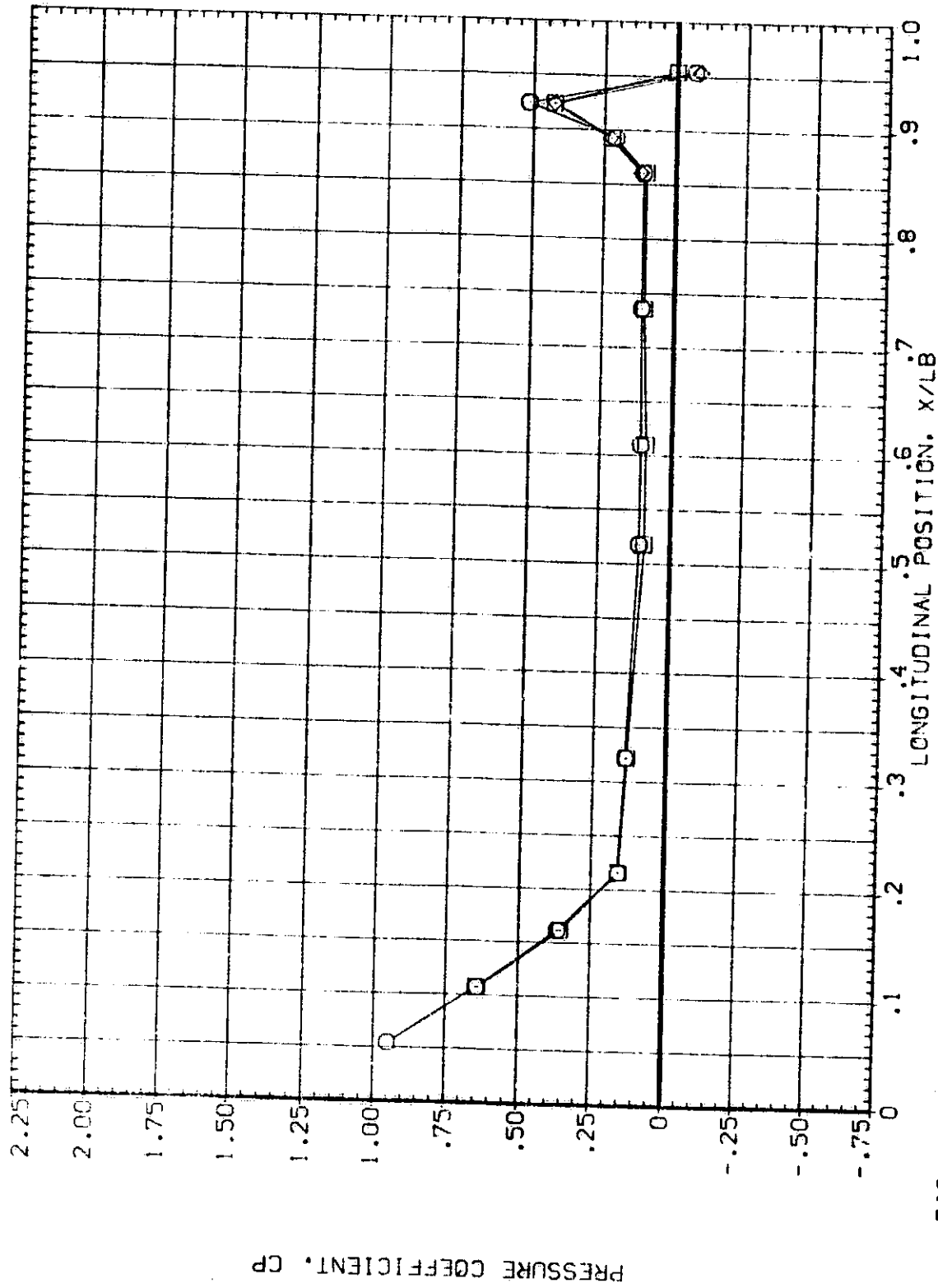


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
□ □ □  
◇

THETA 45.000  
ALPHA 16.560  
MACH 3.480  
67.500  
90.000

PARAMETRIC VALUES  
BETA 1.000  
COUNT 1.000  
PHI 20.000  
180.000

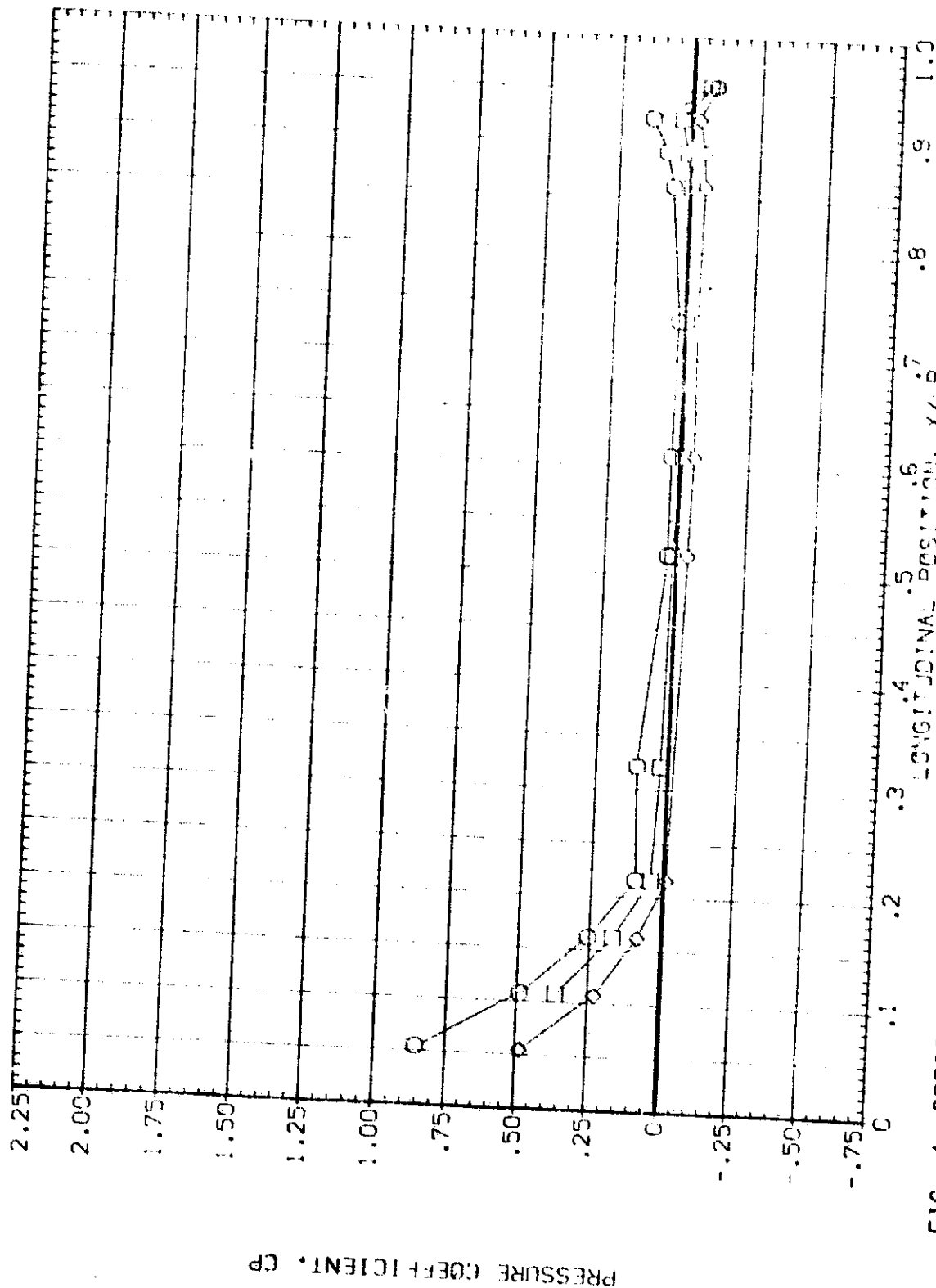


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH 200 SURFACES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A037)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20,000
□	112.500	16.560	3.480	1.000	PHI	180.000
◇	135.000					
◇	157.500					

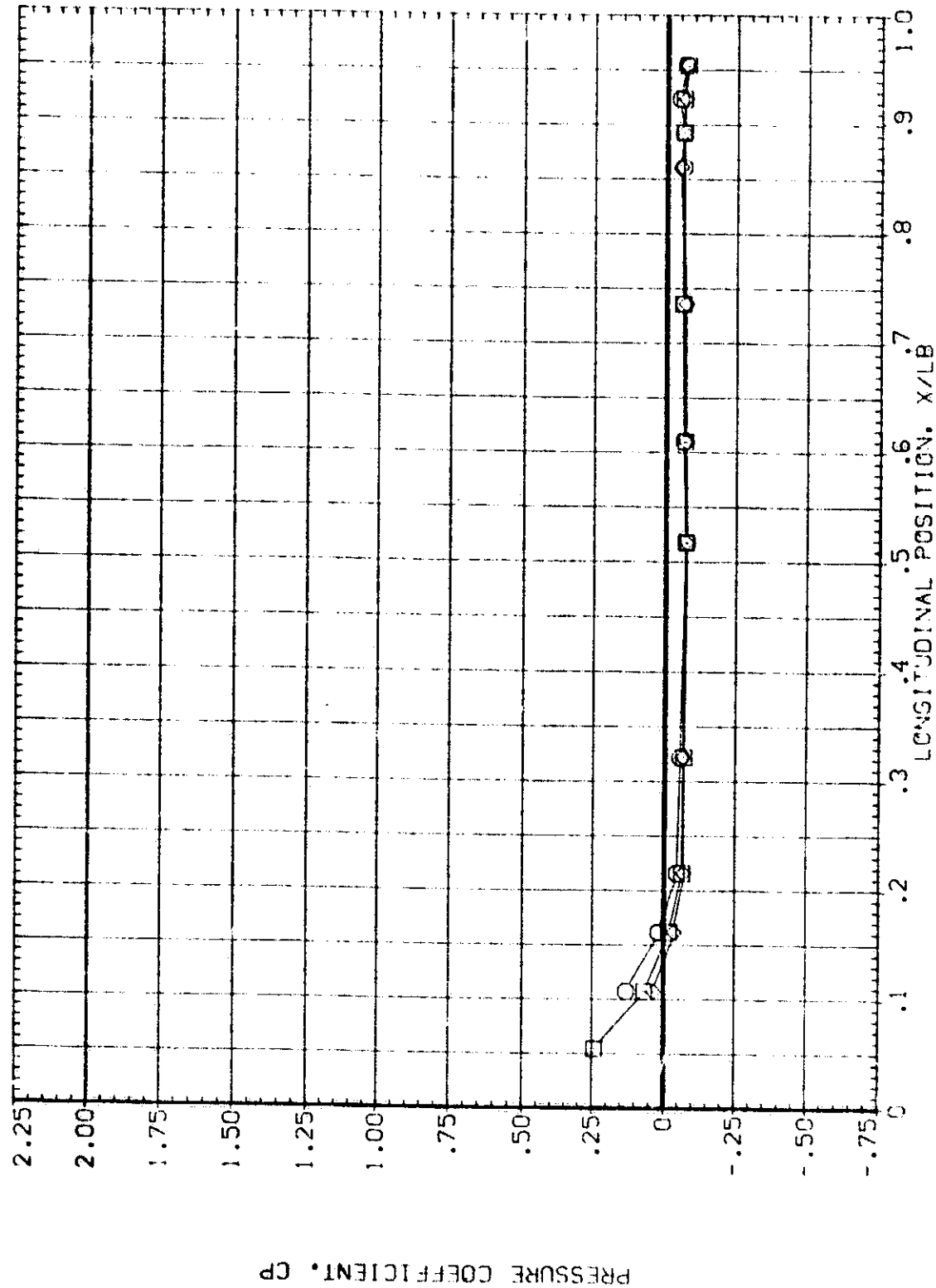


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL

THETA  
180.000  
202.500  
225.000

ALPHA  
16.560

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT

0.000  
1.000  
20.000  
180.000

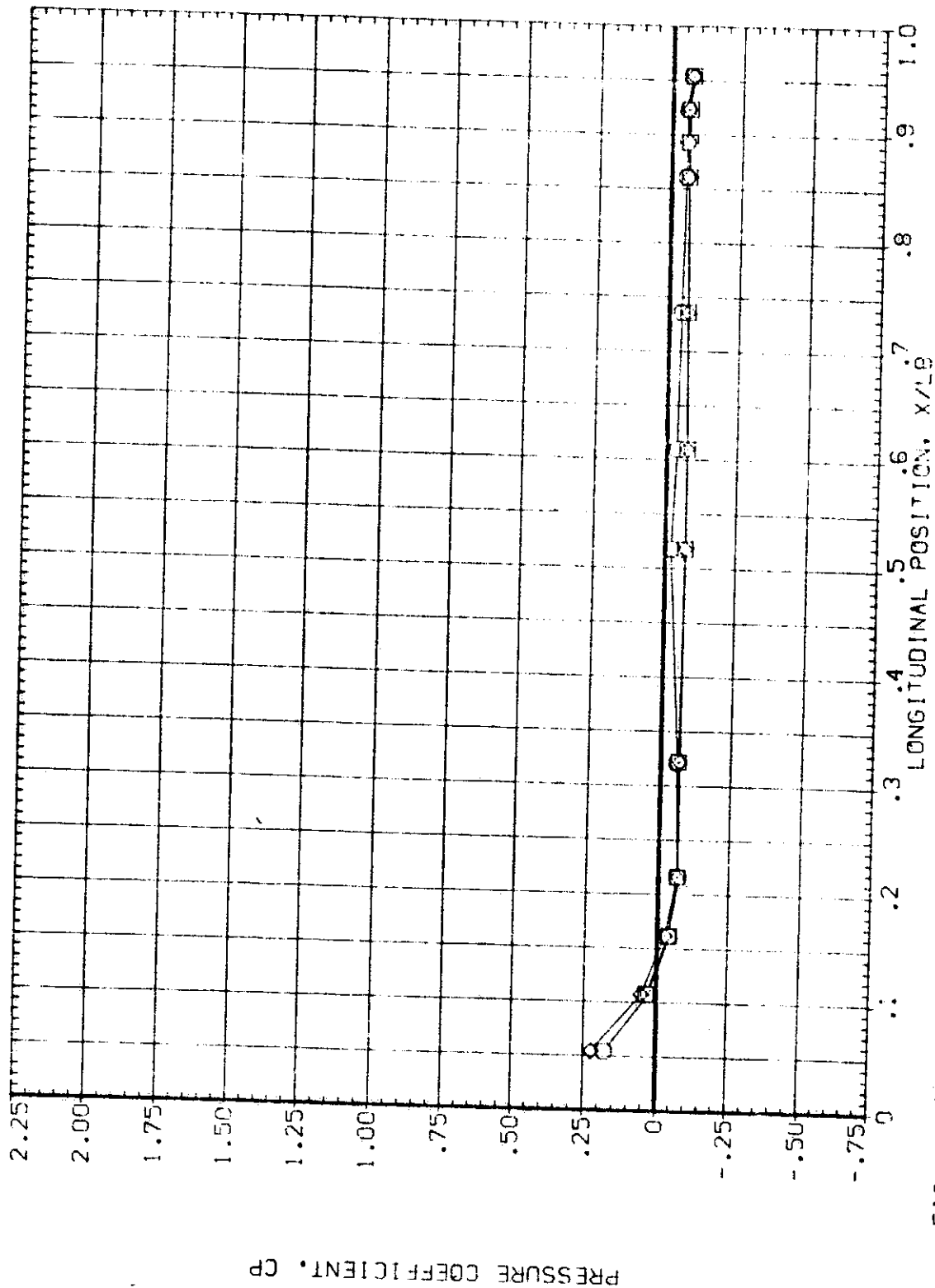


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A037)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
16.560

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000 1.000  
OFFSET PHI

20.000  
180.000

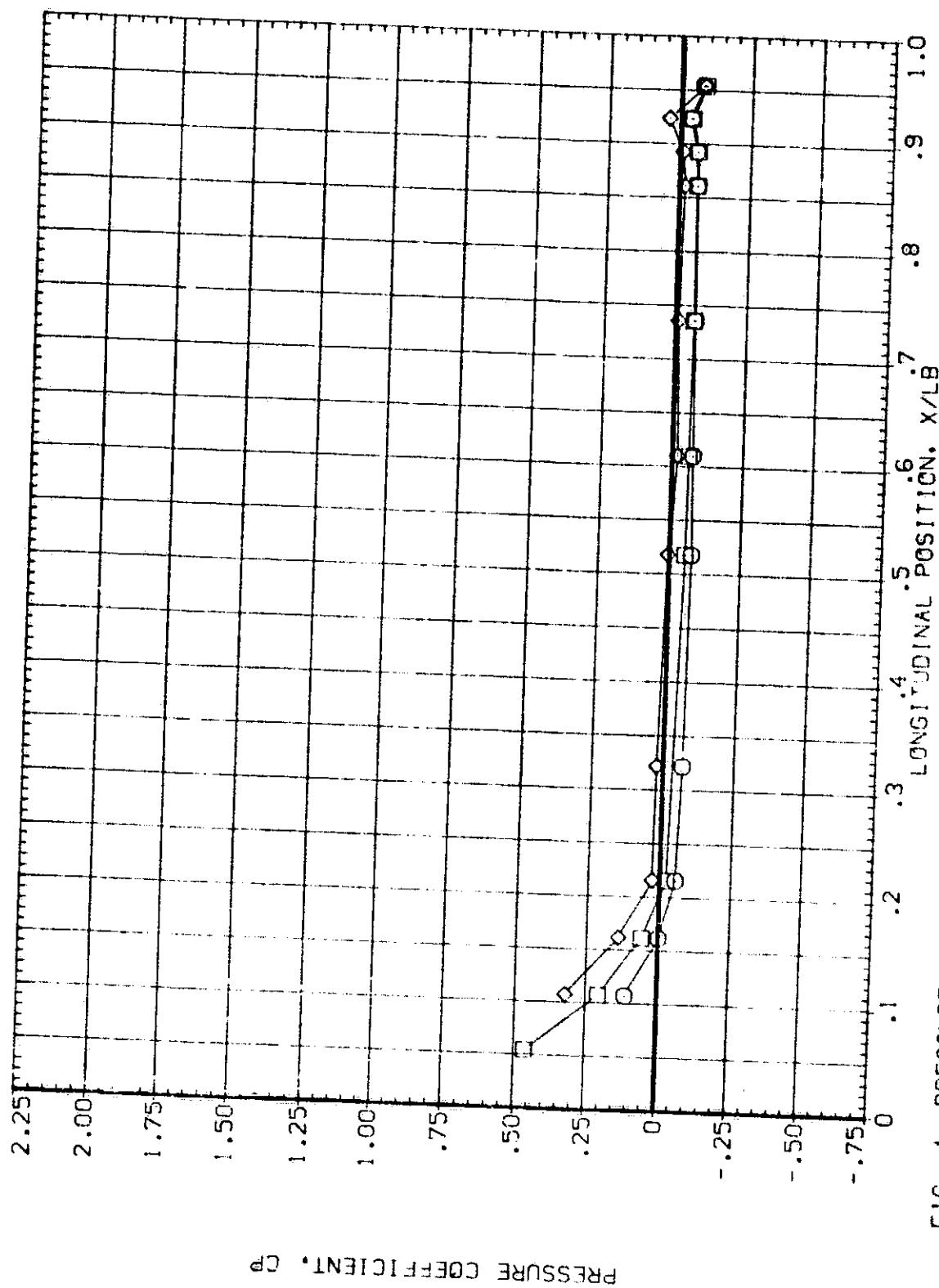


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	16.560	3.480	MCOUNT	.000 OFFSET
□	326.000				1.000 PHI
◇	346.000				20.000
					180.000

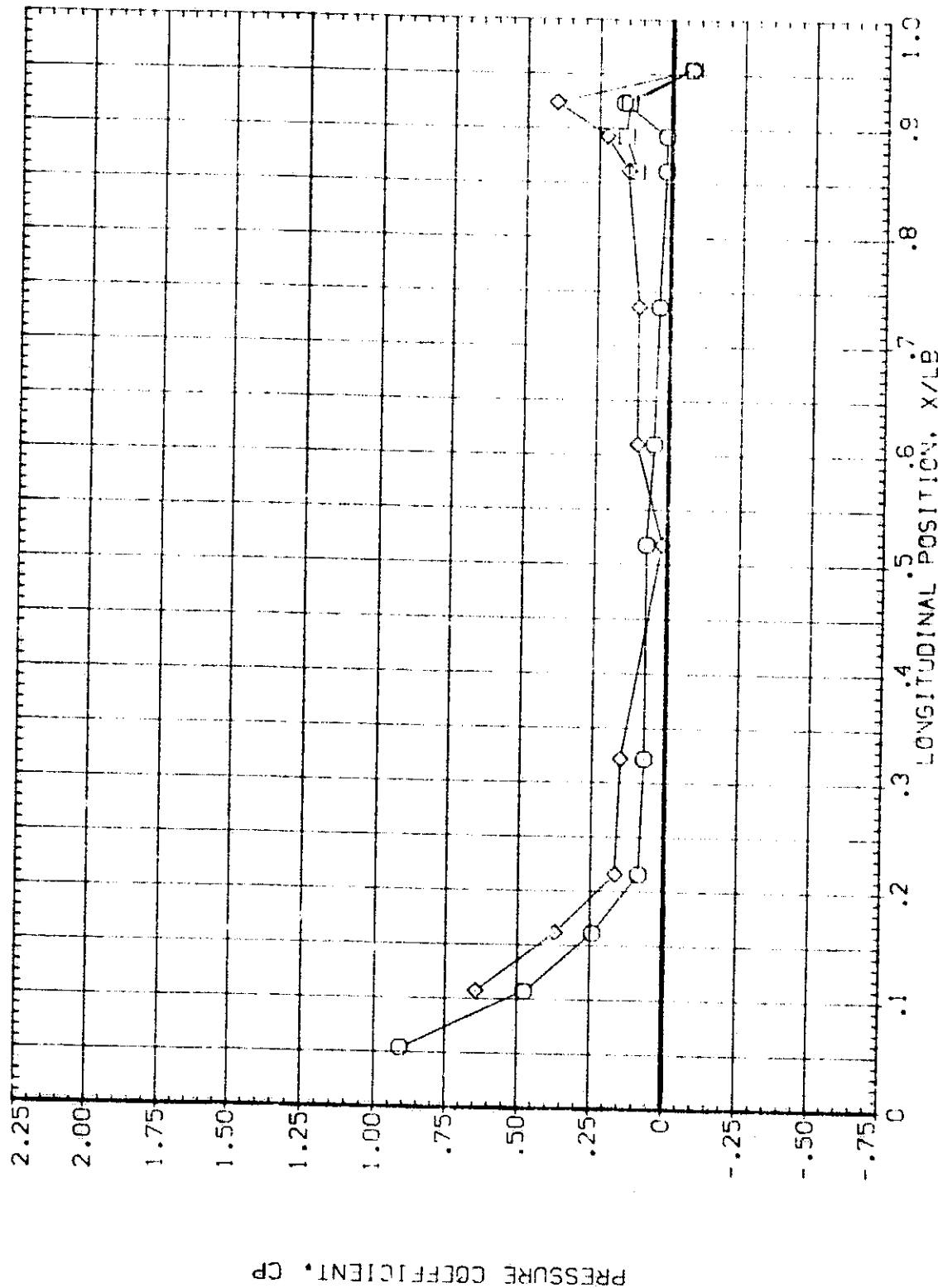


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A038)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	.000	20.610	3.480	1.000	.000	20.000
□	14.000					180.000
◇	24.000					

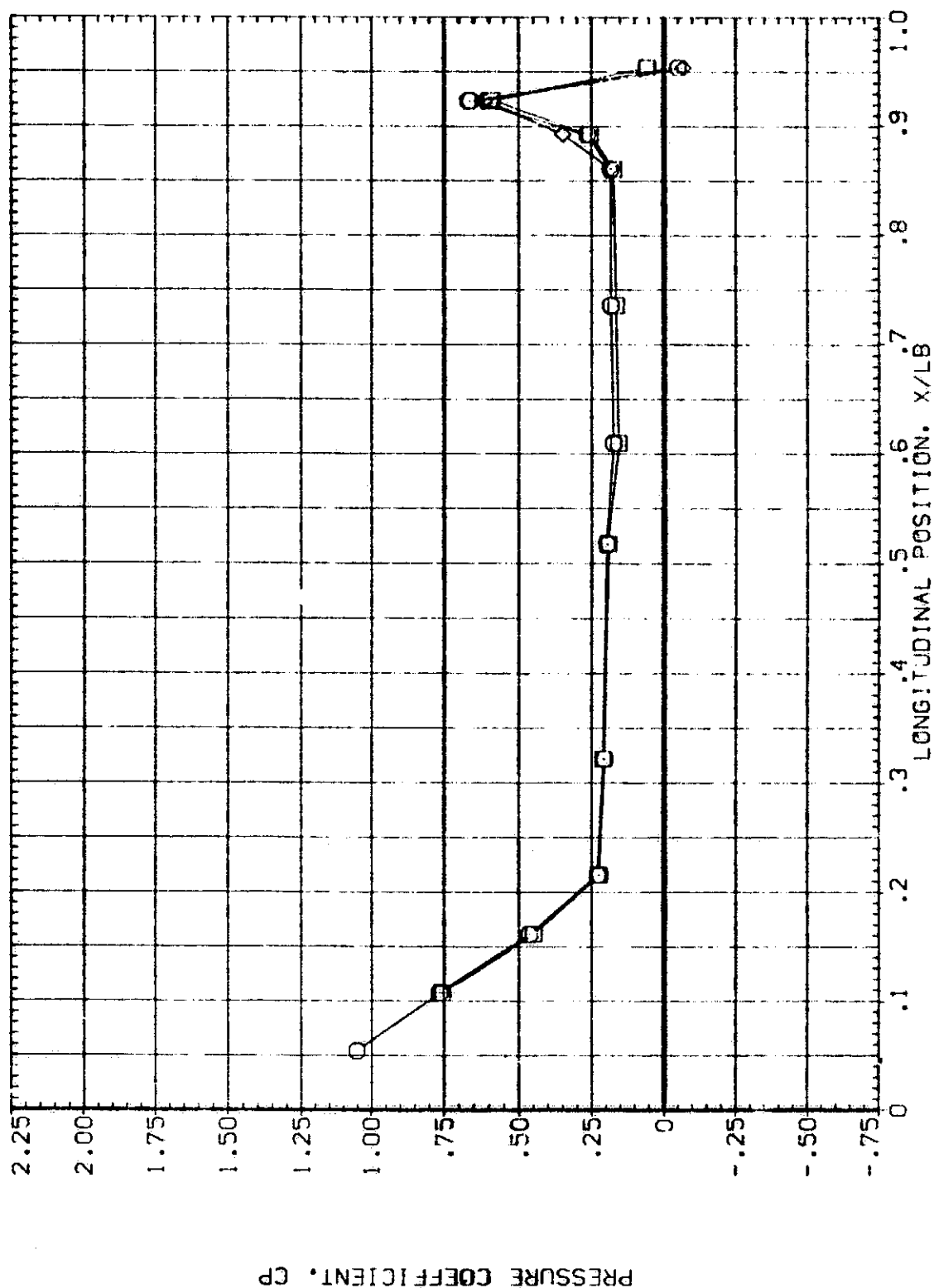


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

SYMBOL  
○ □ ◇

THETA 45.000  
67.500  
90.000

ALPHA 20.610

MACH 3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000 .000  
1.000 1.000  
20.000 180.000  
OFFSET PHI

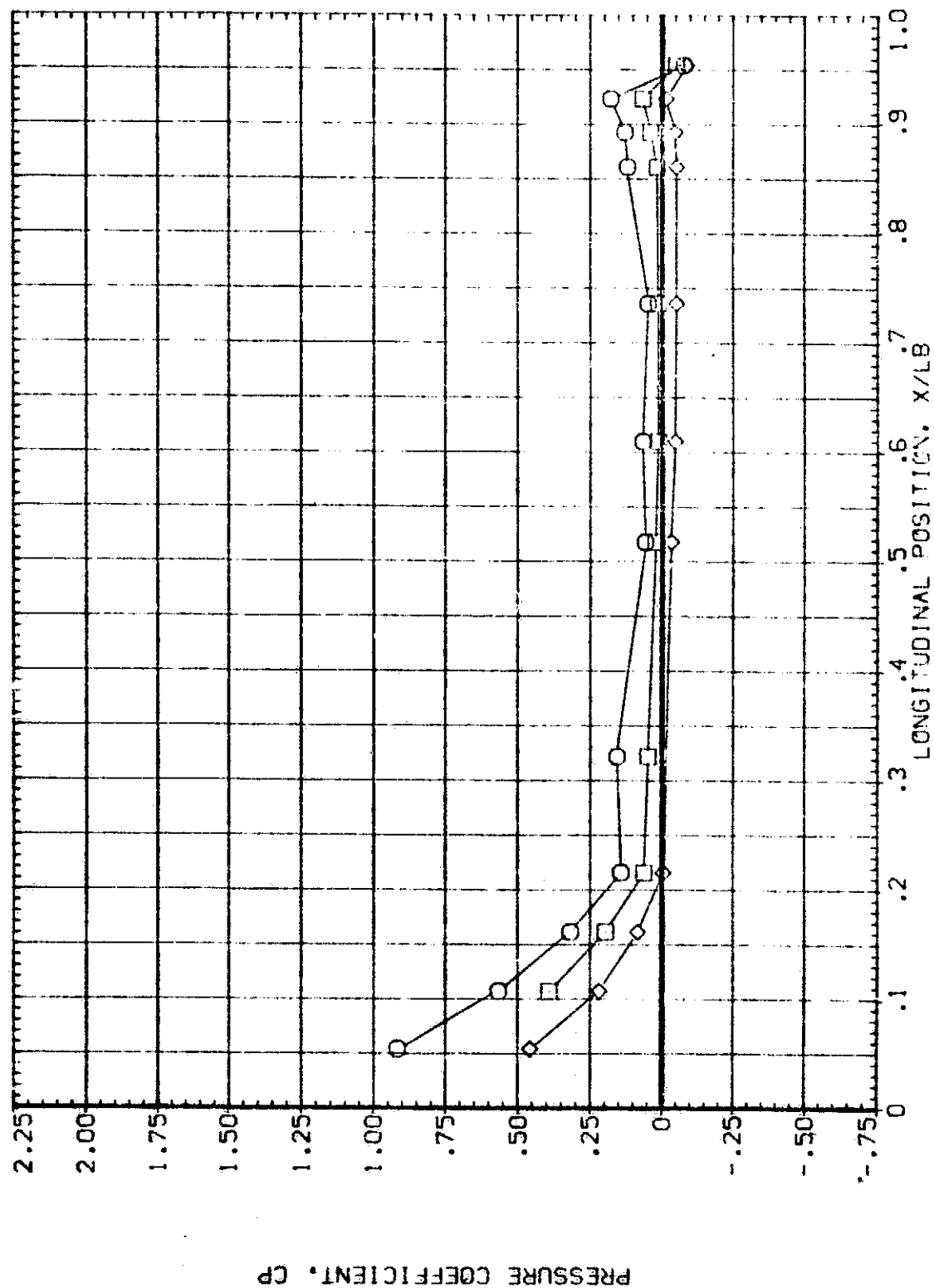


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A038)

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI 180.000

THETA ALPHA MACH  
 112.500 20.610 3.480  
 135.000  
 157.500

SYMBOL  
 □  
 ○  
 ◇

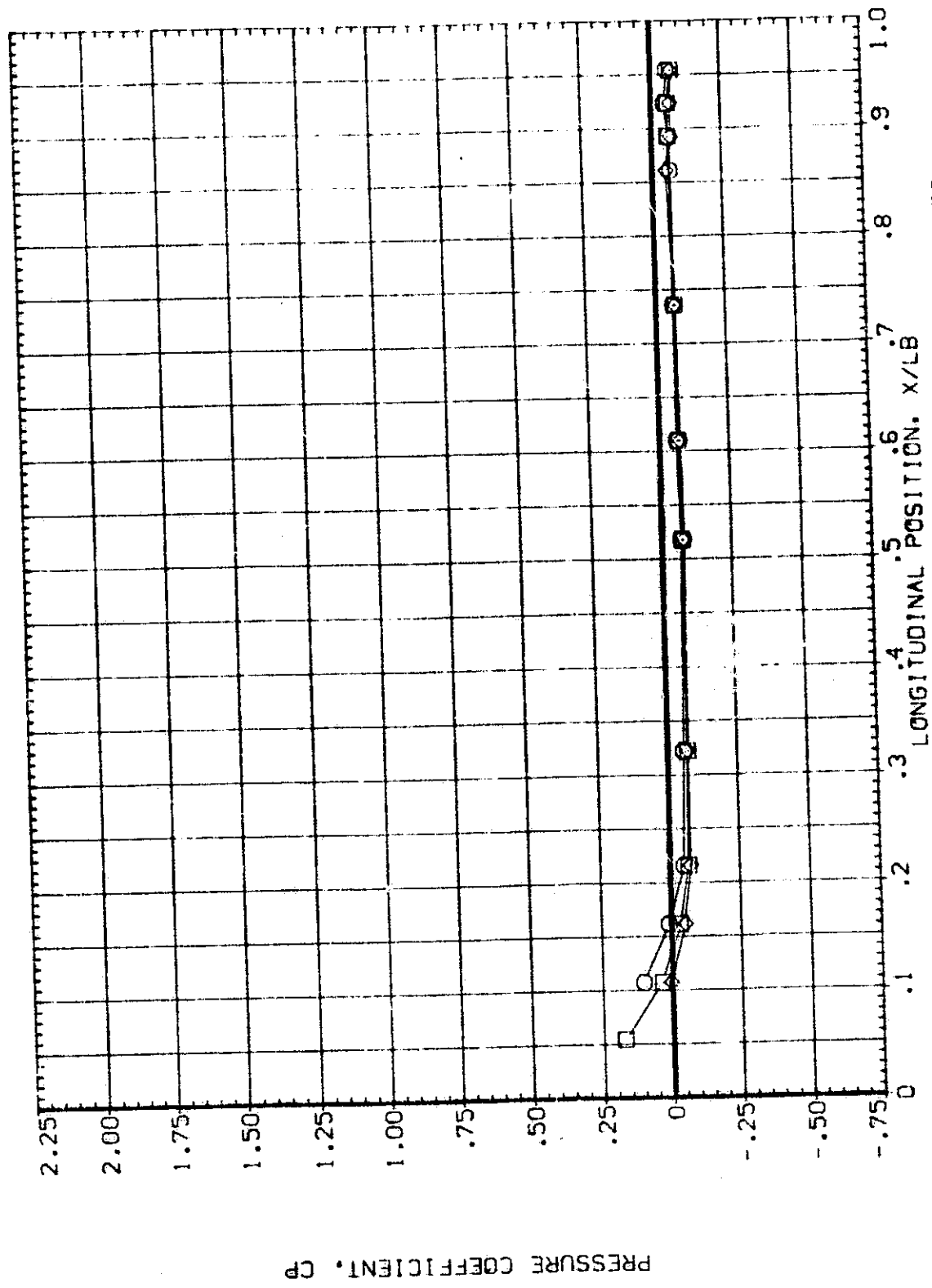


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A038)

SYMBOL     $\beta$     ALPHA    MACH  
 O    180.000    20.610    3.480  
 □    232.500  
 ◇    275.000

PARAMETRIC VALUES  
 $\beta$      $\alpha$     OFFSET    20.000  
 1.000    PH    180.000

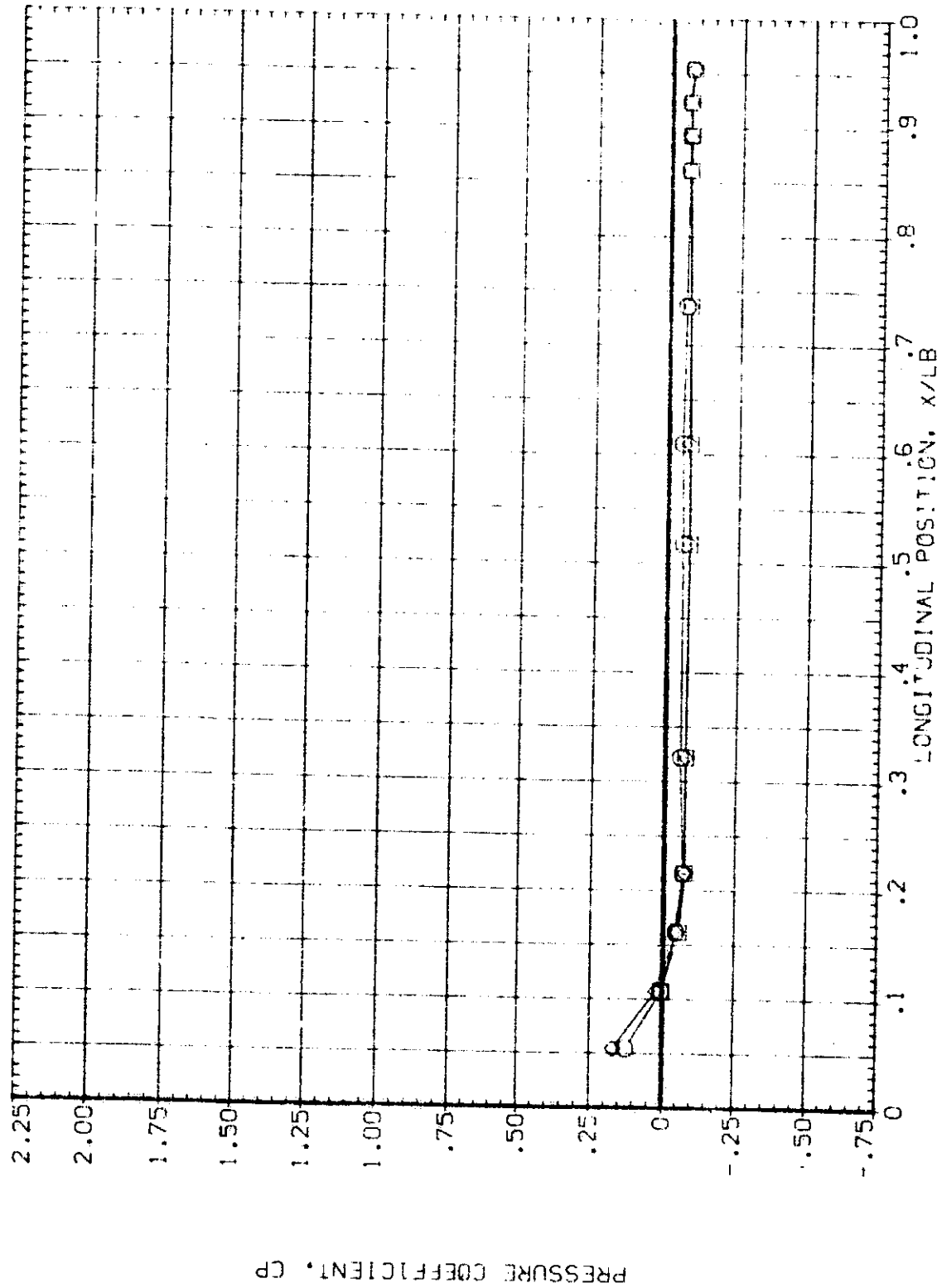


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUSANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA038)

SYMBOL

THETA

ALPHA

MACH

247.500

20.610

3.480

270.000

292.500

BETA

MOUNT

PARAMETRIC VALUES

.000 OFFSET 20.000

1.000 PHI 180.000

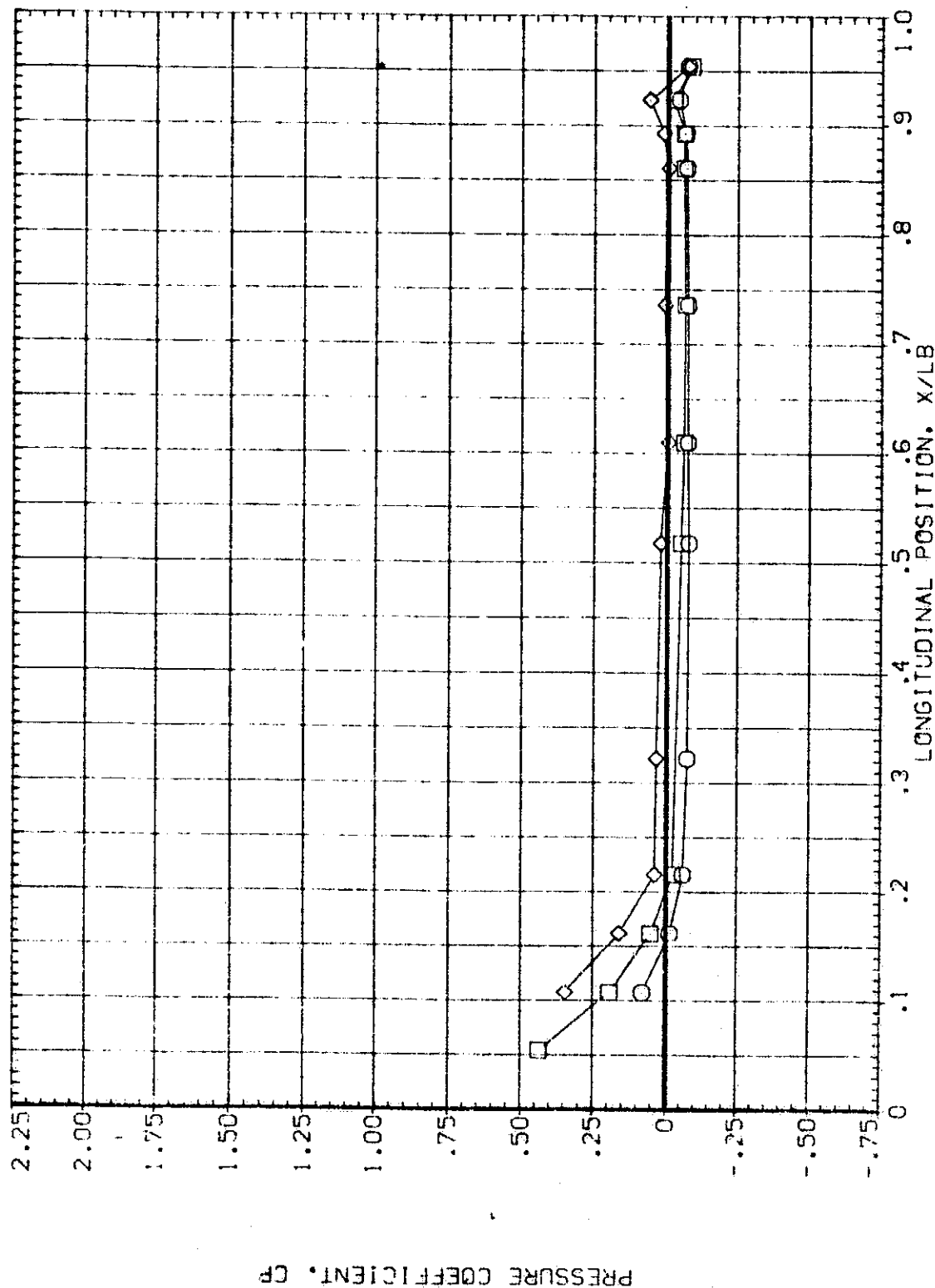


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 20.610

MACH  
 3.480

BETA  
 MOUN'

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI

20.000  
 100.000

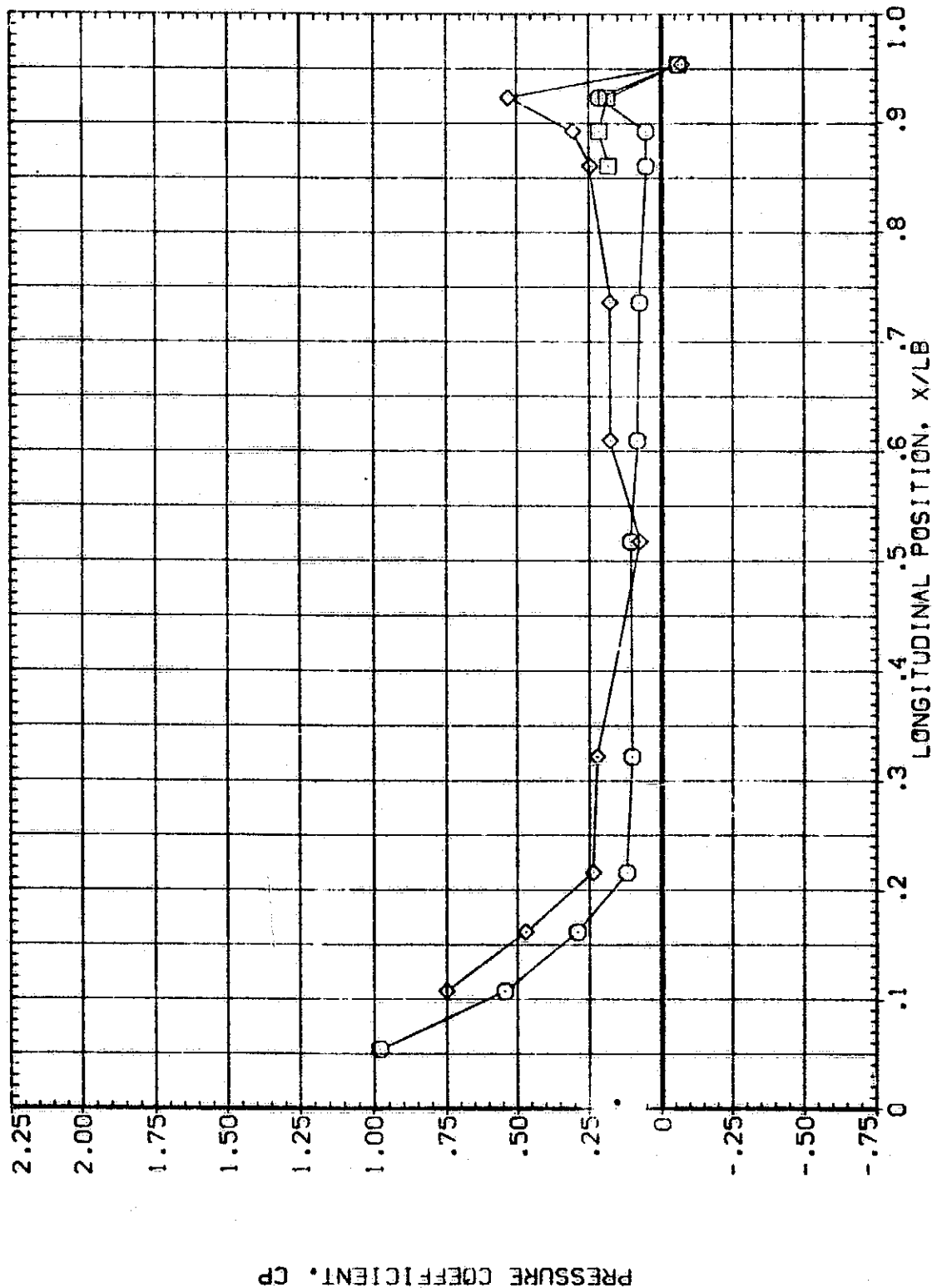


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA039)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	.000	24.660	3.480	.000	20.000	
◇	14.000			1.000	180.000	
◇	24.000					

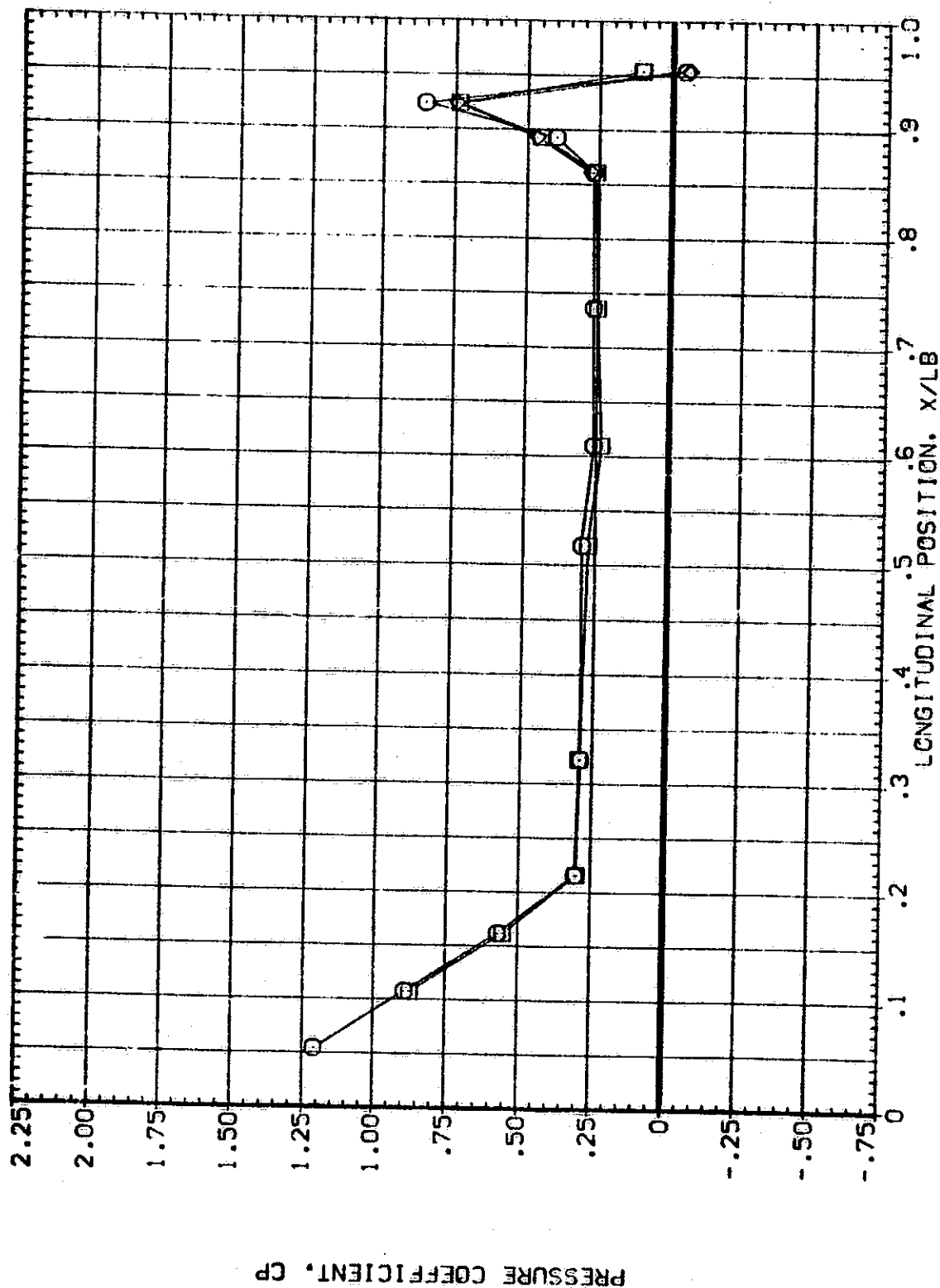


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(PIA039)

SYMBOL  
○  
□  
◇

THETA 45.000  
67.500  
90.000

ALPHA 24.660  
MACH 3.460

PARAMETRIC VALUES  
BETA .000  
MOUNT 1.000  
PHI 20.000  
180.000

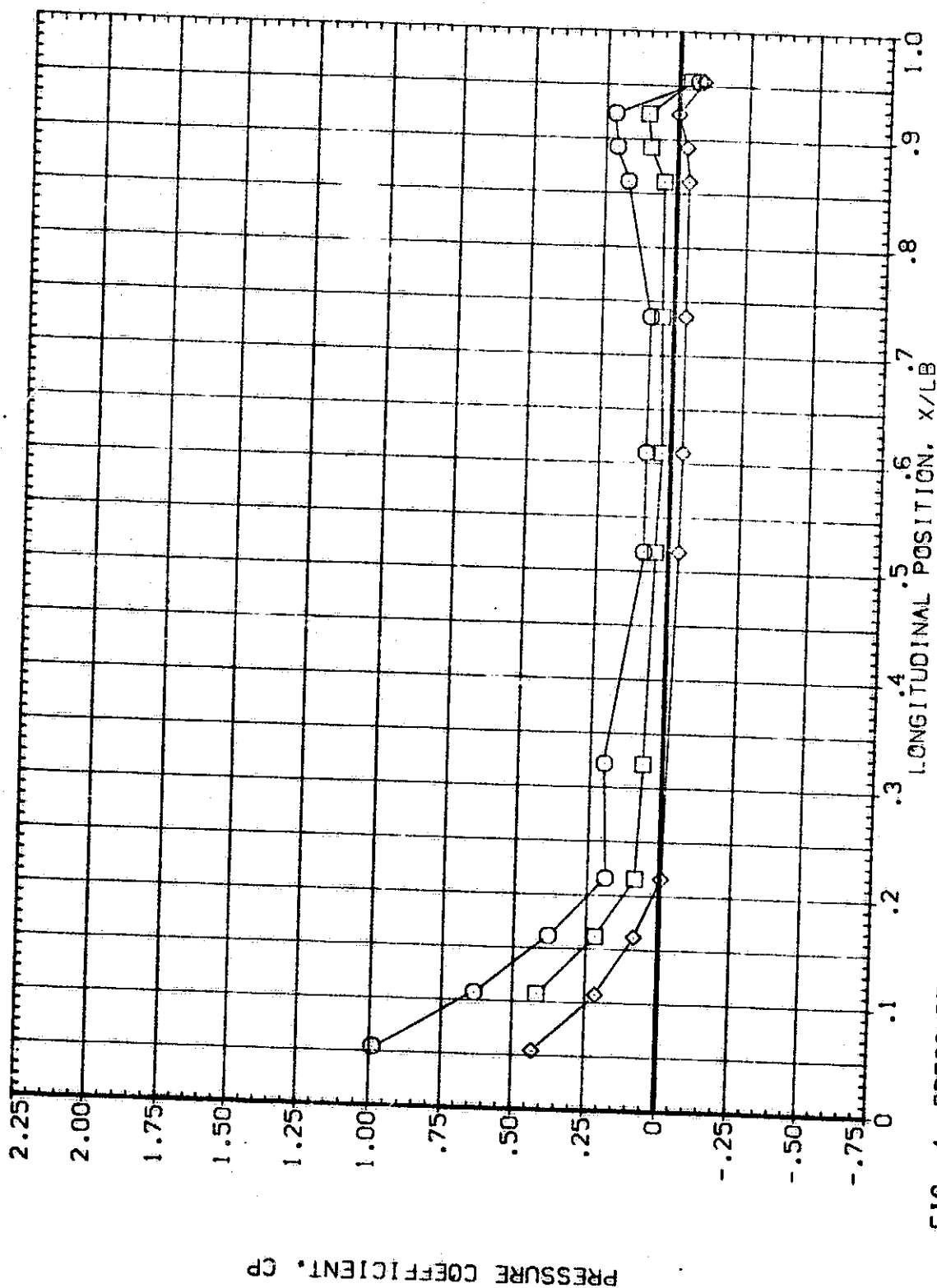


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA039)

SYMBOL  
 112.500  
 135.000  
 157.500

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 24.660

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 20.000  
 180.000  
 OFFSET  
 PHI

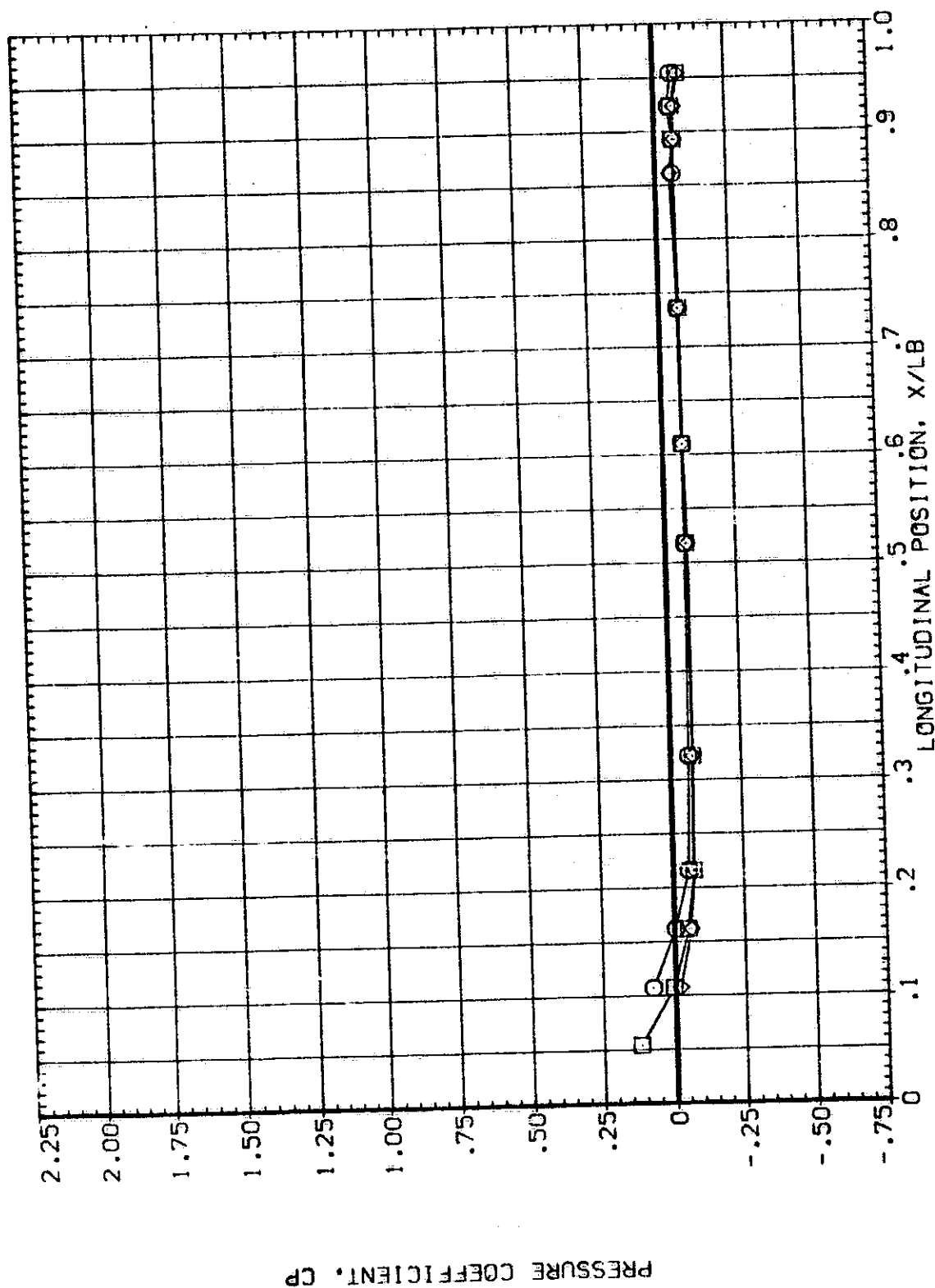


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A039)

SYMBOL

THETA  
180.000  
202.500  
225.000

ALPHA  
24.660

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI

20.000  
180.000

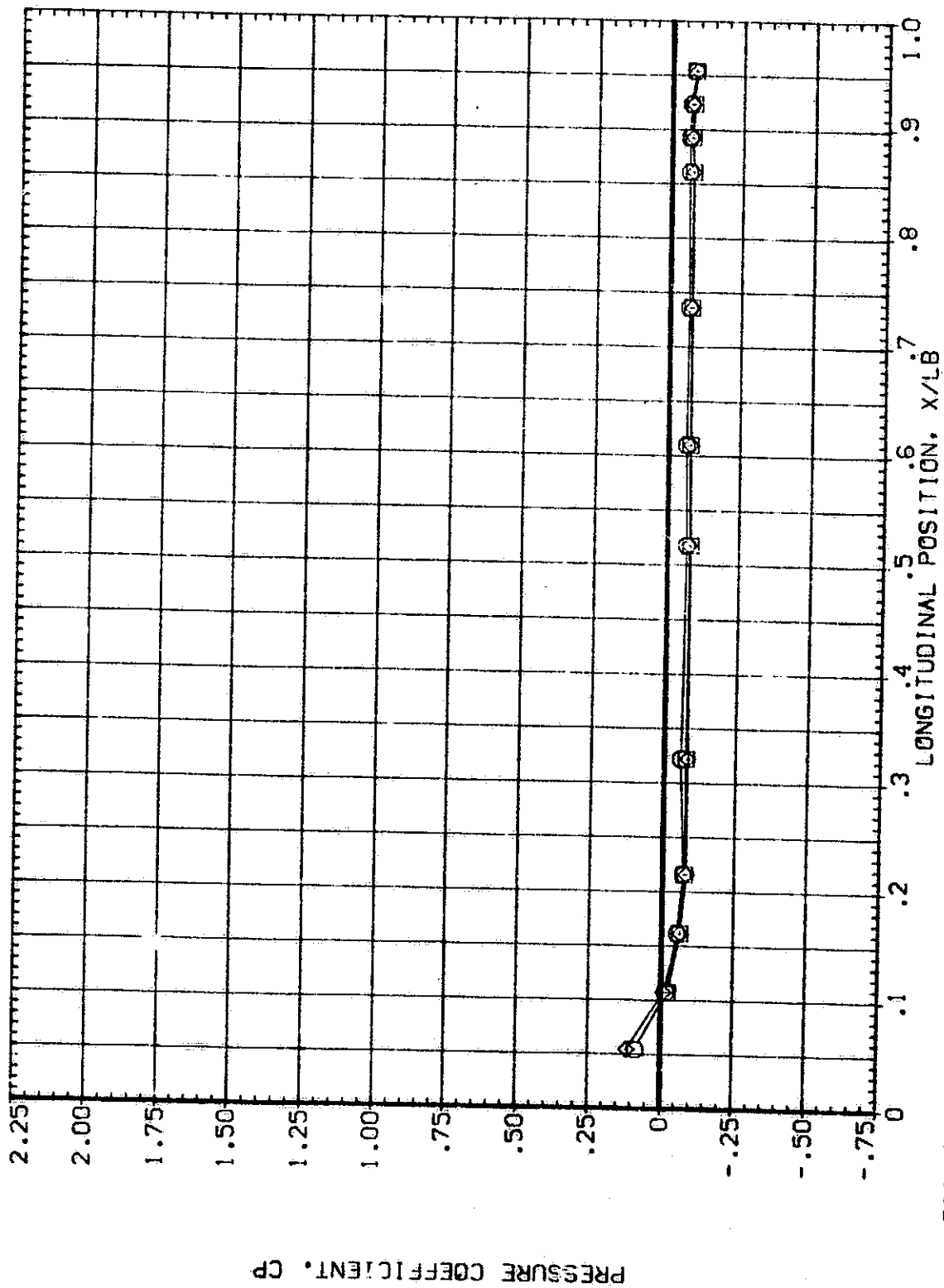


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A039)

SYMBOL  
□  
◇

THETA  
247.500  
270.000  
292.500

ALPHA  
24.660

MACH  
3.480

PARAMETRIC VALUES  
MOUNT  
PHI  
1.000  
180.000

20.000  
180.000

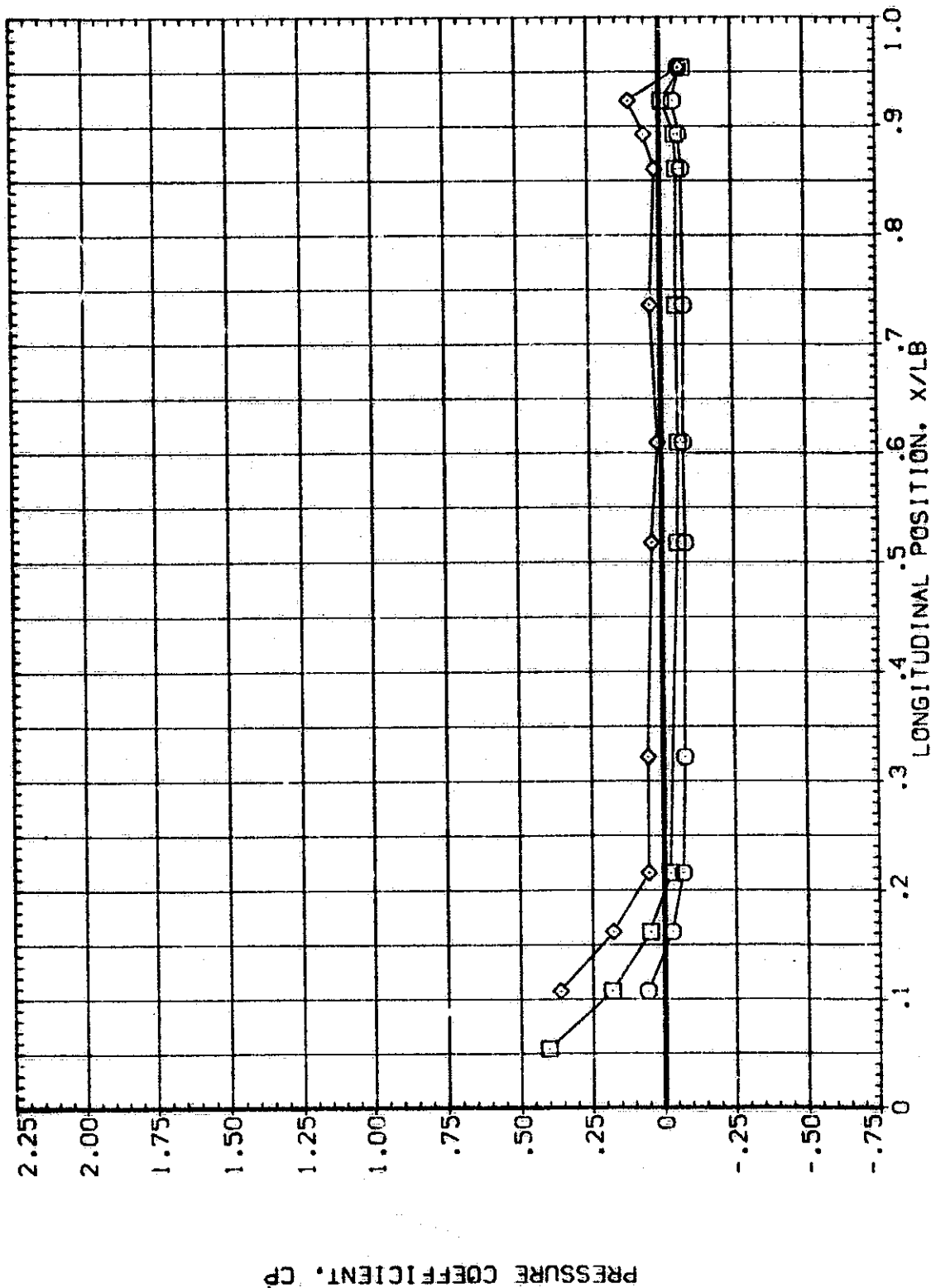


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES		
	315.000	326.000	24.660	3.480	BETA	OFFSET	PHI		
○						.000		20.000	
□						1.000		180.000	
◇									

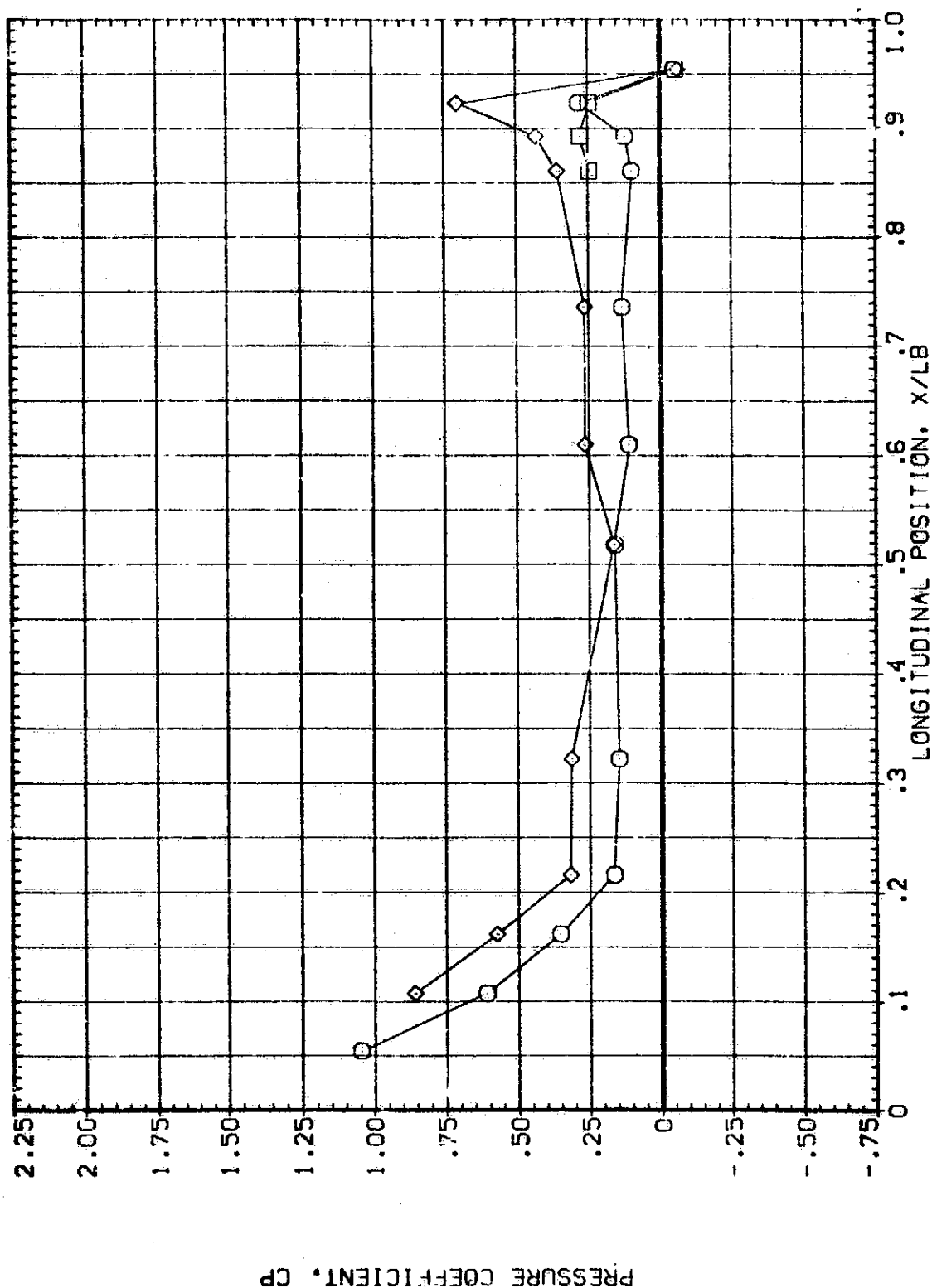


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA040)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	.000	28.700	3.480	.000	1.000	20.000
□	14.000					180.000
◇	24.000					

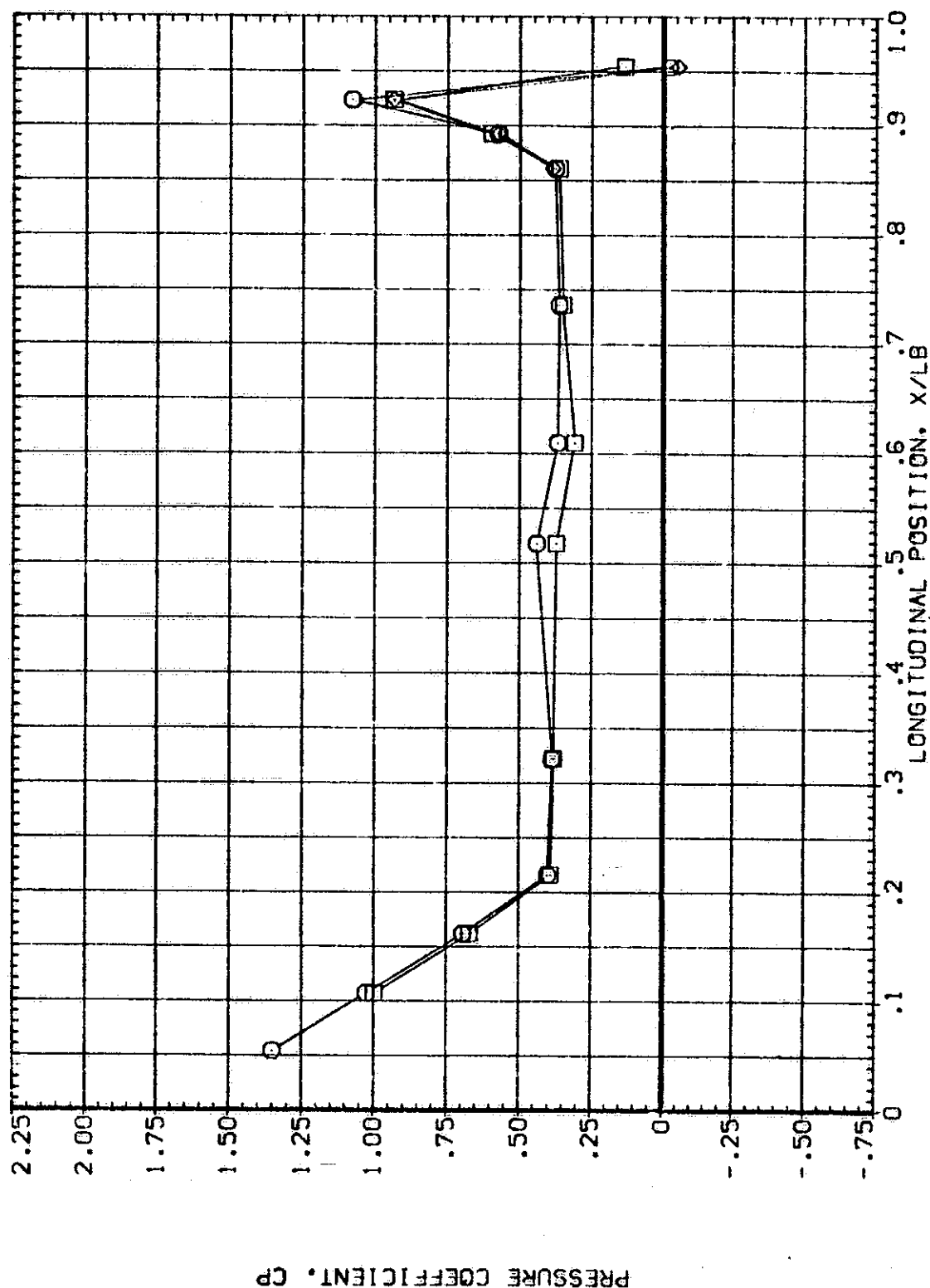


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

SYMBOL  
 45.000  
 67.500  
 90.000

THETA  
 28.700  
 3.480

ALPHA  
 28.700  
 3.480

MACH  
 28.700  
 3.480

BETA  
 28.700  
 3.480

PHI  
 28.700  
 3.480

PARAMETRIC VALUES  
 .000  
 1.000  
 20.000  
 180.000

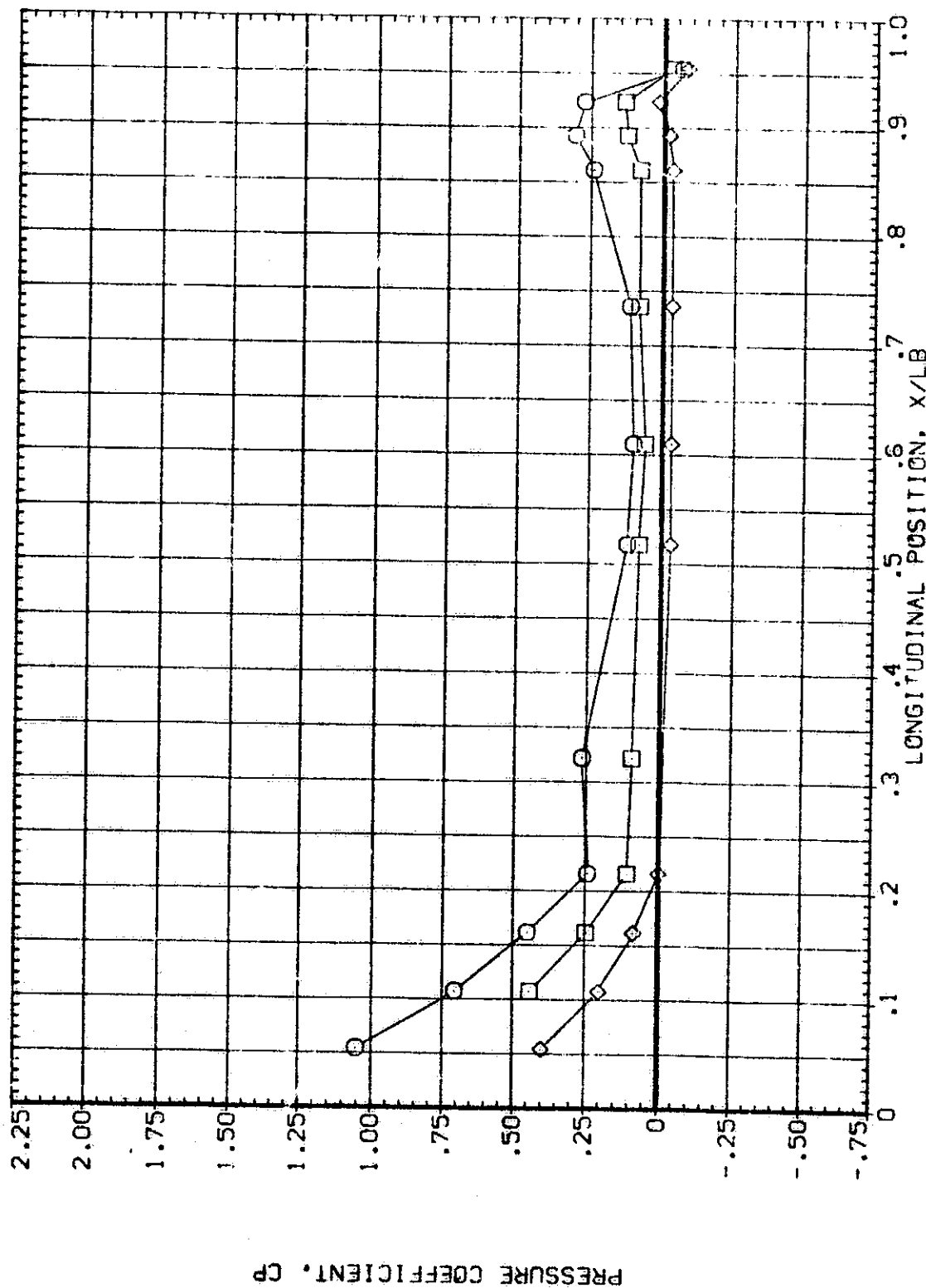


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A040)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	28.700	3.480	.000	1.000	20.000
□	135.000			1.000		180.000
◇	157.500					

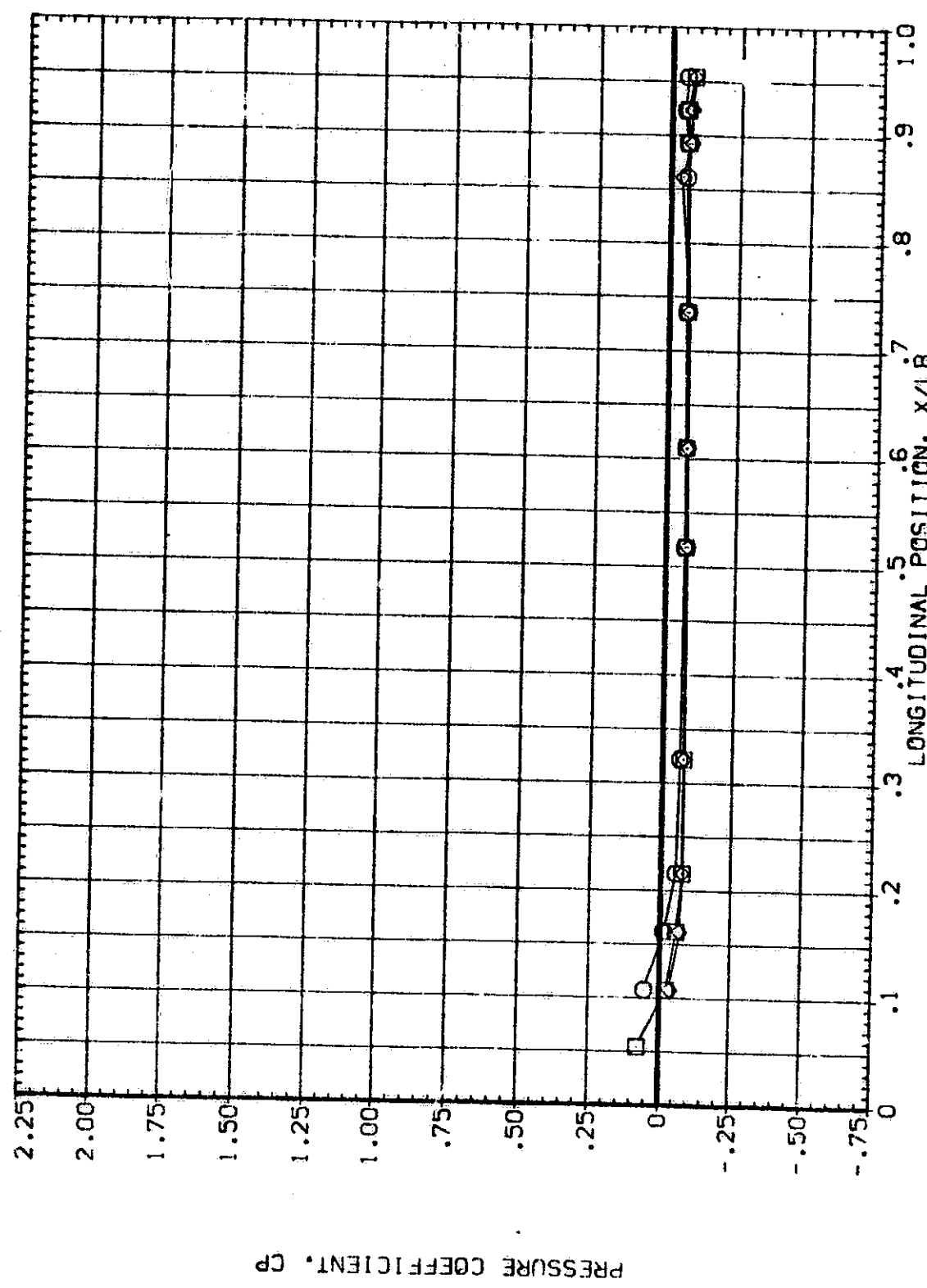


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL

THETA  
180.000  
202.500  
225.000

ALPHA  
28.700  
MACH  
3.480

BETA  
MOL/IT

PARAMETRIC VALUES  
.000 OFFSET  
1.000 PHI  
20.000  
180.000

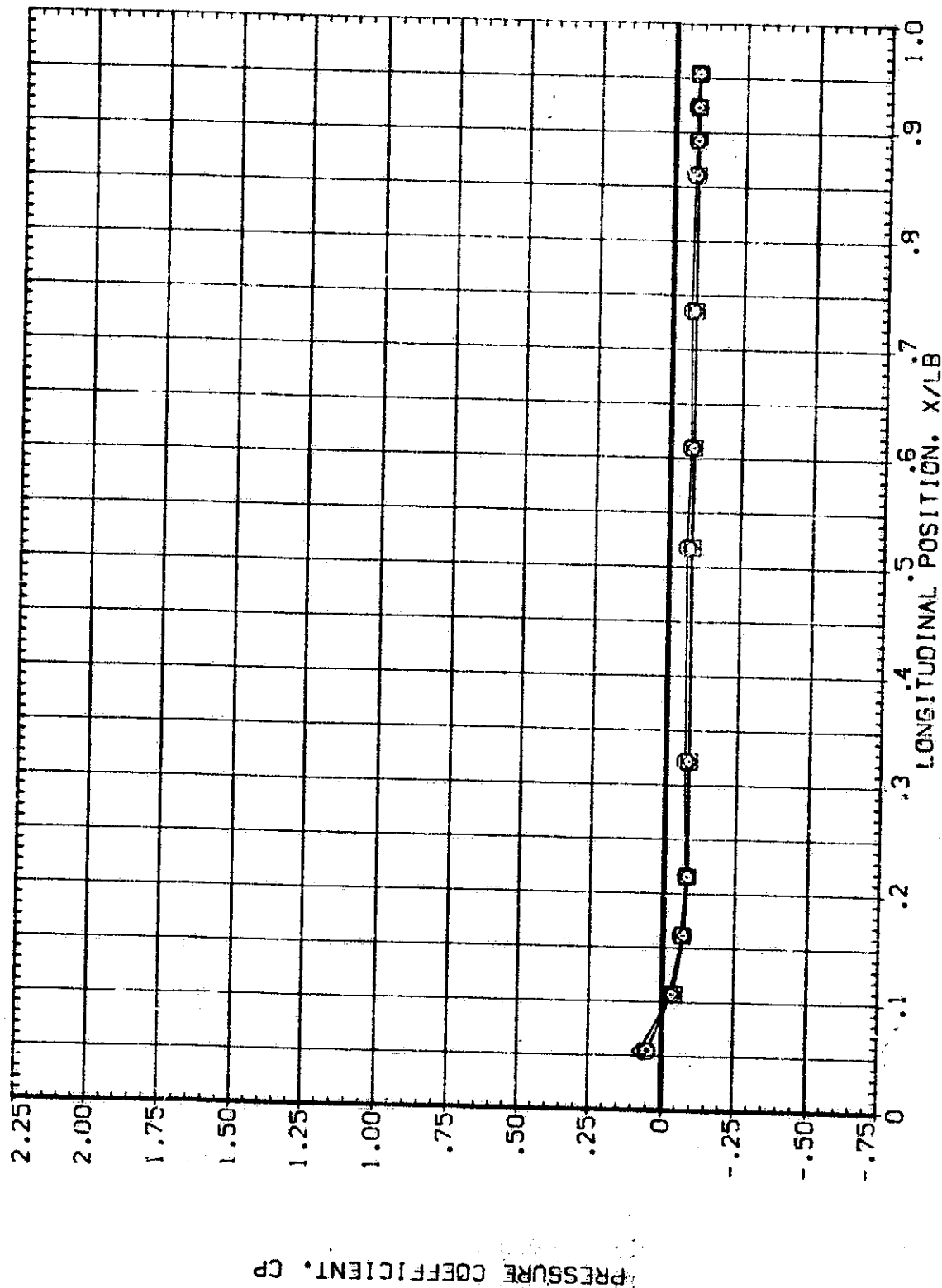


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA040)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA HOUNT	OFFSET PHI	20.000 180.000
○	247.500	28.700	3.480			
□	270.000					
◇	292.500					

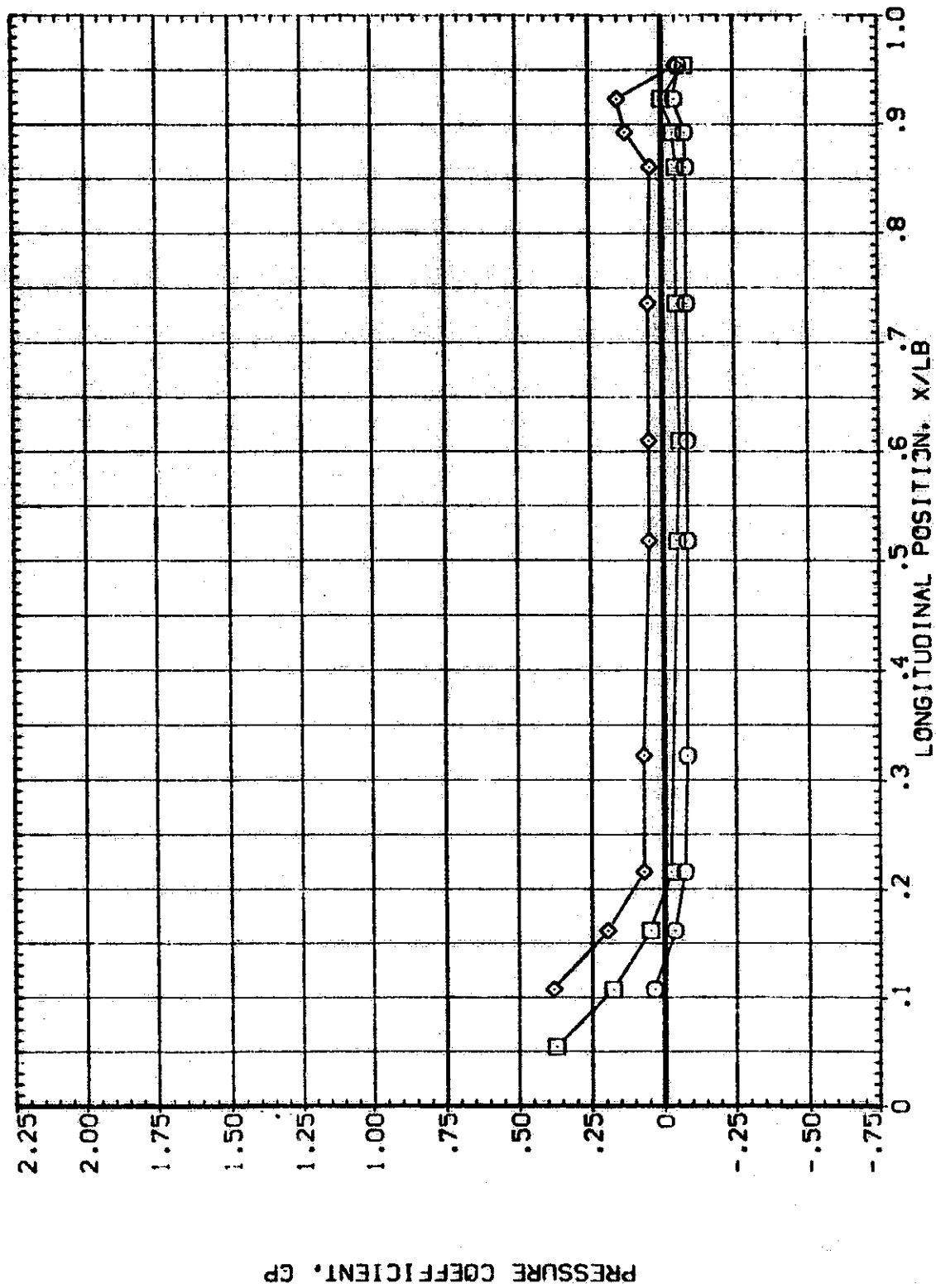


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 O  
 □  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 28.700

MACH  
 3.480

PARAMETRIC VALUES  
 BETA  
 .000  
 1.000  
 180.000  
 OFFSET  
 PHI

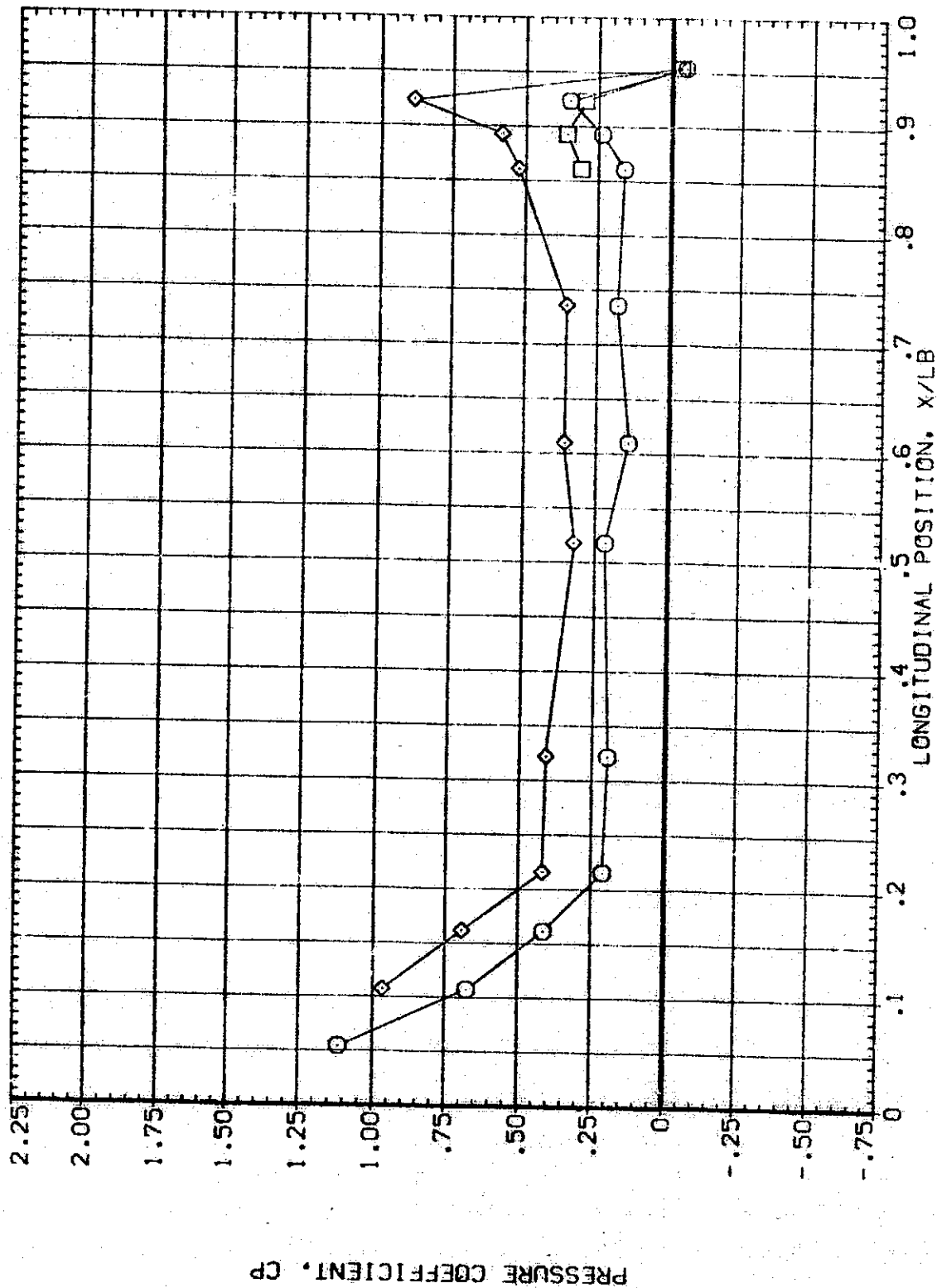


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA041)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
◇	.000	-8.360	3.480	MSUNT	.000	.000
□	14.000				1.000	225.000
◇	24.000					

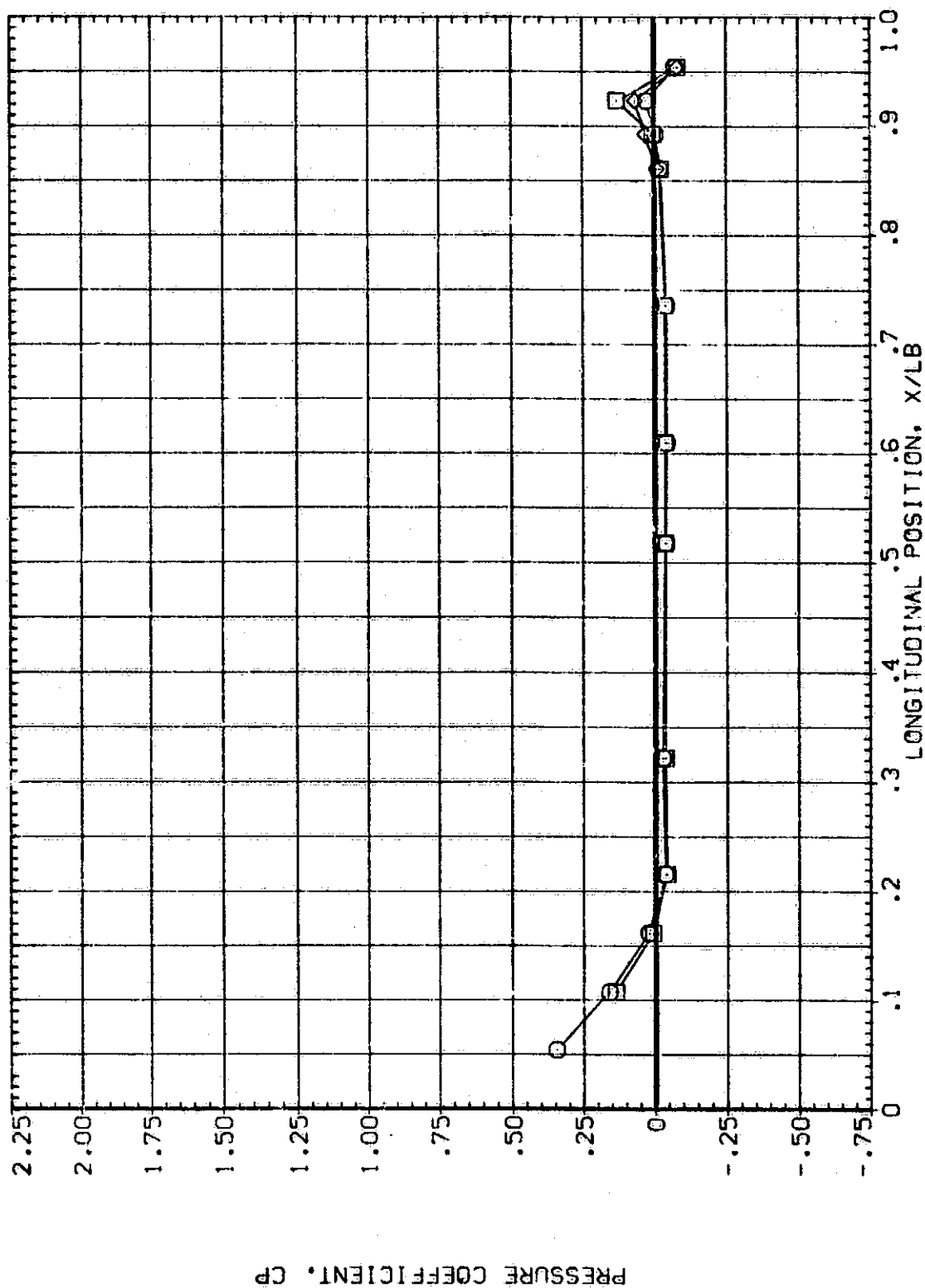


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A041)

SYMBOL  
 □  
 ◇

THETA 45.000  
 67.500  
 90.000  
 ALPHA -8.360  
 MACH 3.480

BETA MOUNT  
 .000  
 1.000  
 225.000  
 PH1  
 .000  
 .000

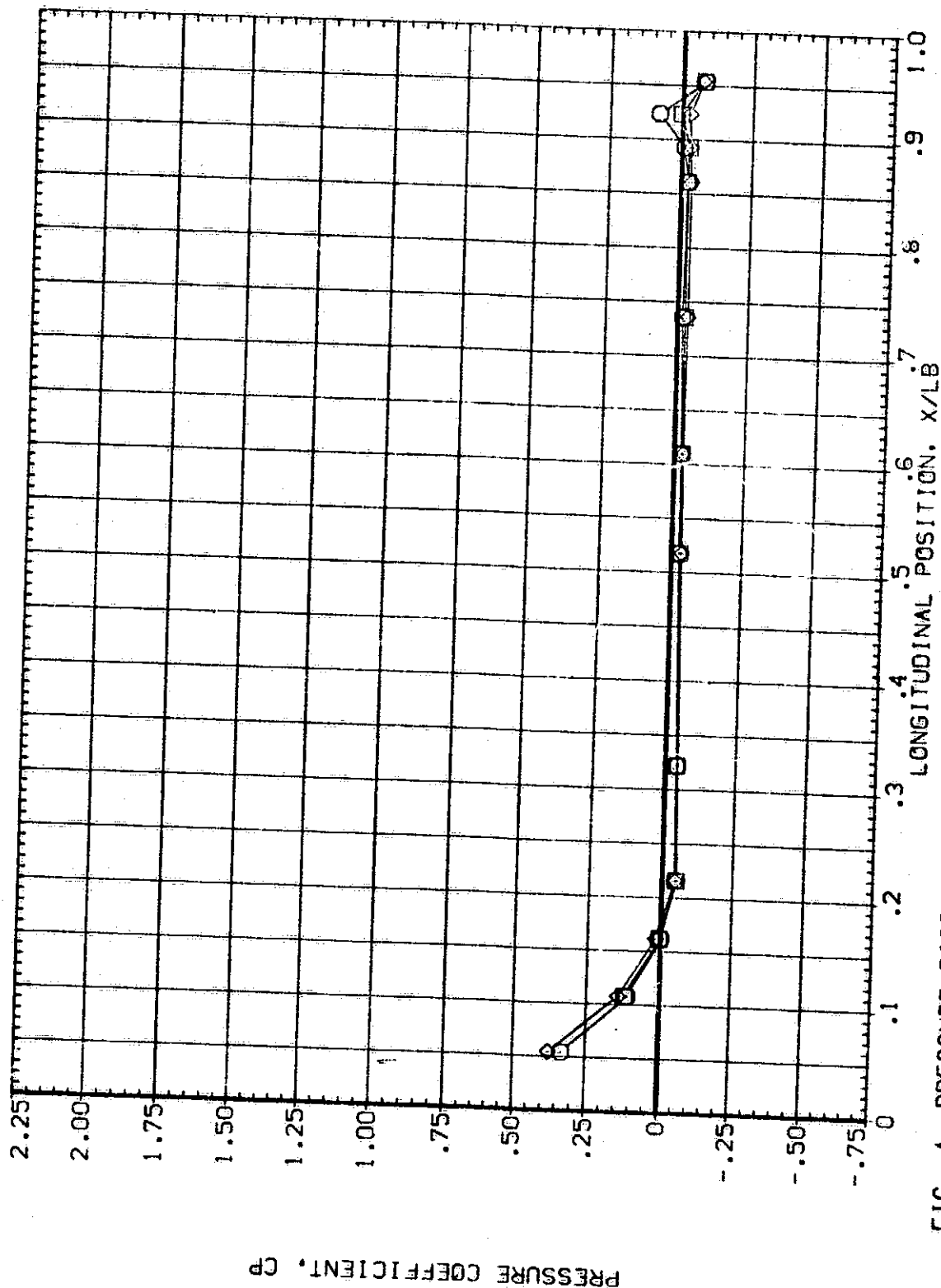


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A041)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	-8.360	3.480	.000	.000	.000
□	135.000			1.000		225.000
◇	157.500					

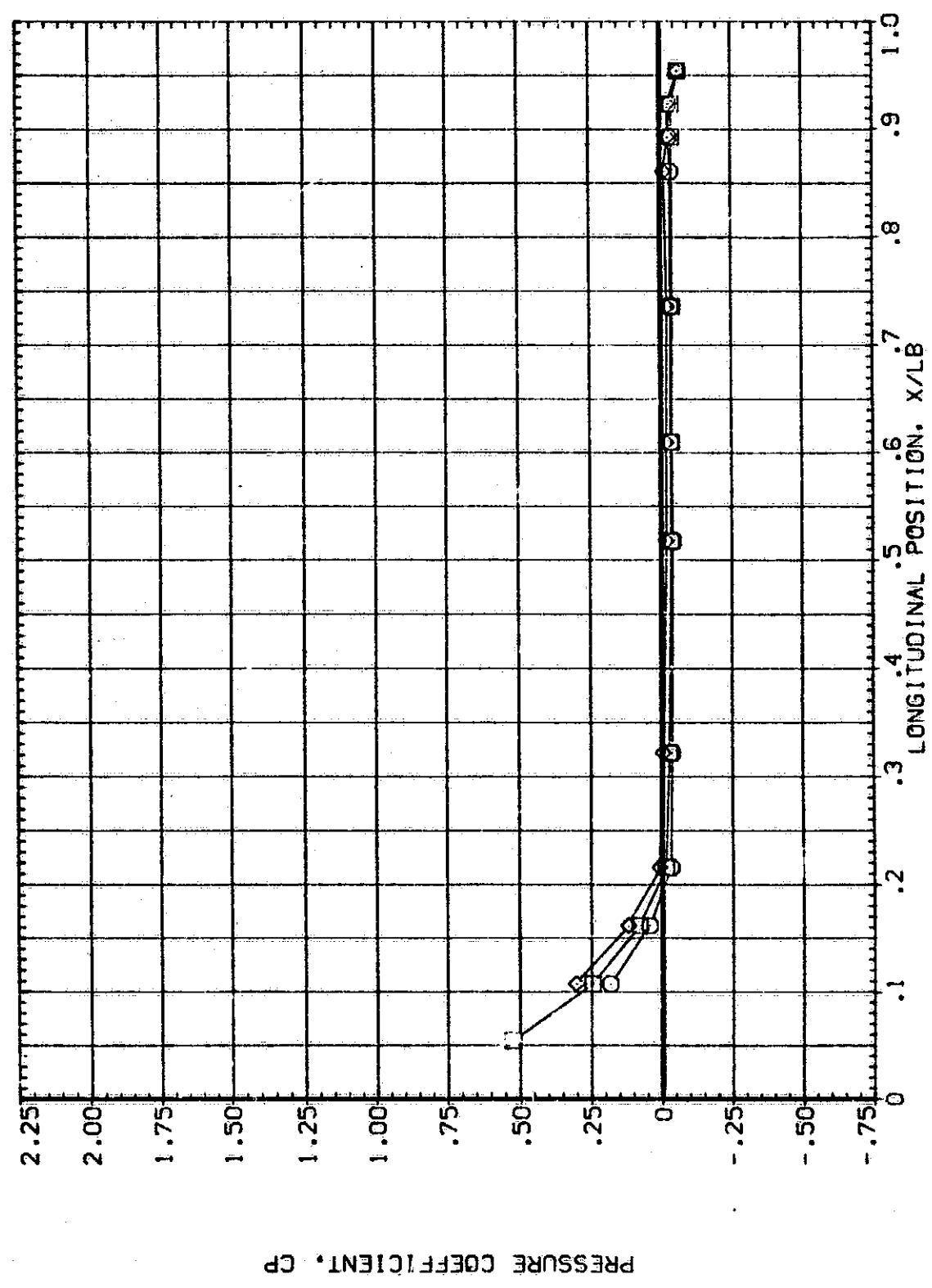


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA041)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 180.000  
 202.500  
 225.000

ALPHA  
 -8.360

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 .000  
 PHI  
 225.000

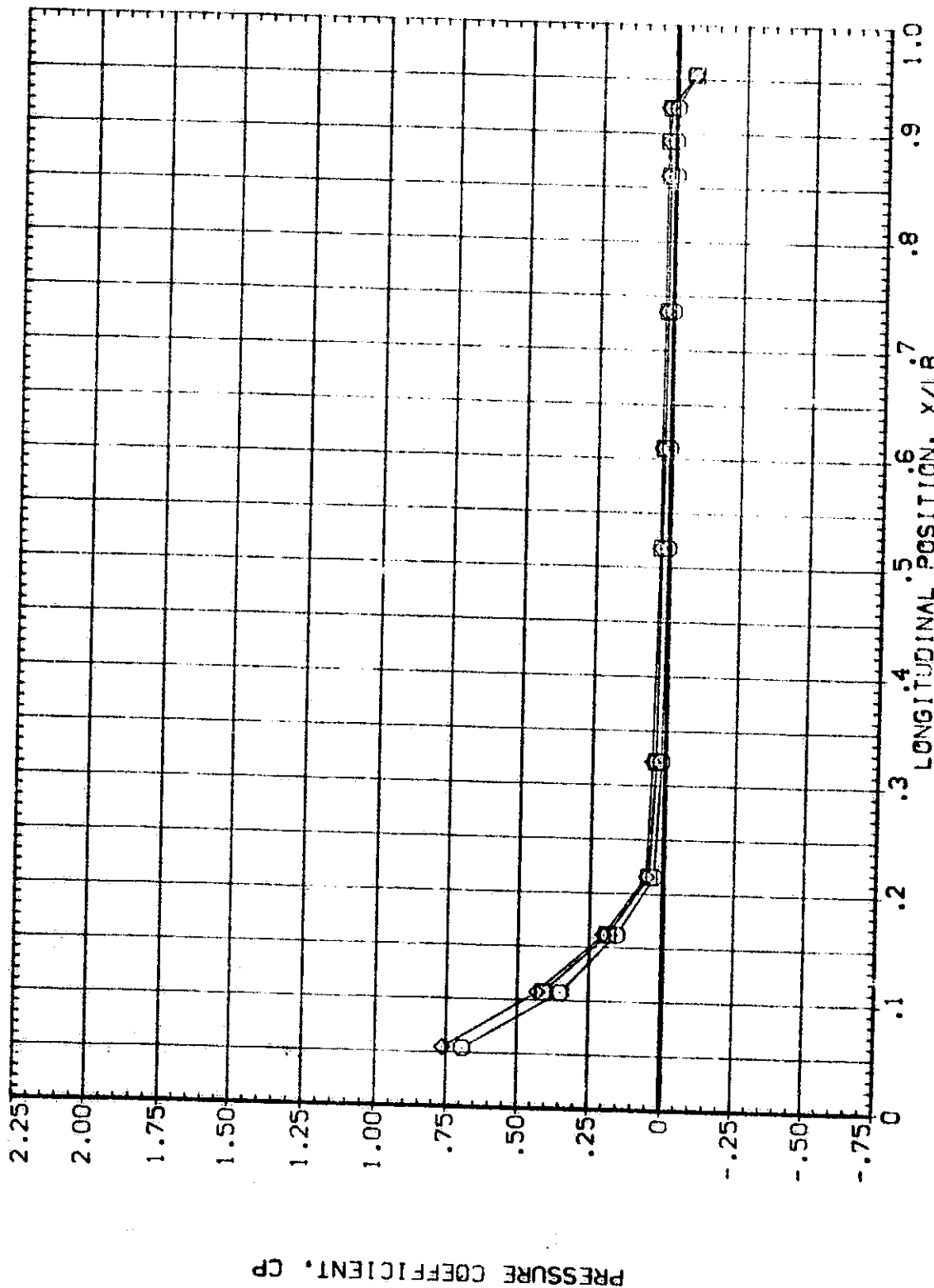


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA041)

SYMBOL THETA ALPHA MACH  
 □ 247.500 -8.360 3.480  
 ◇ 270.000  
 ◇ 292.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 PHJ .000  
 225.000

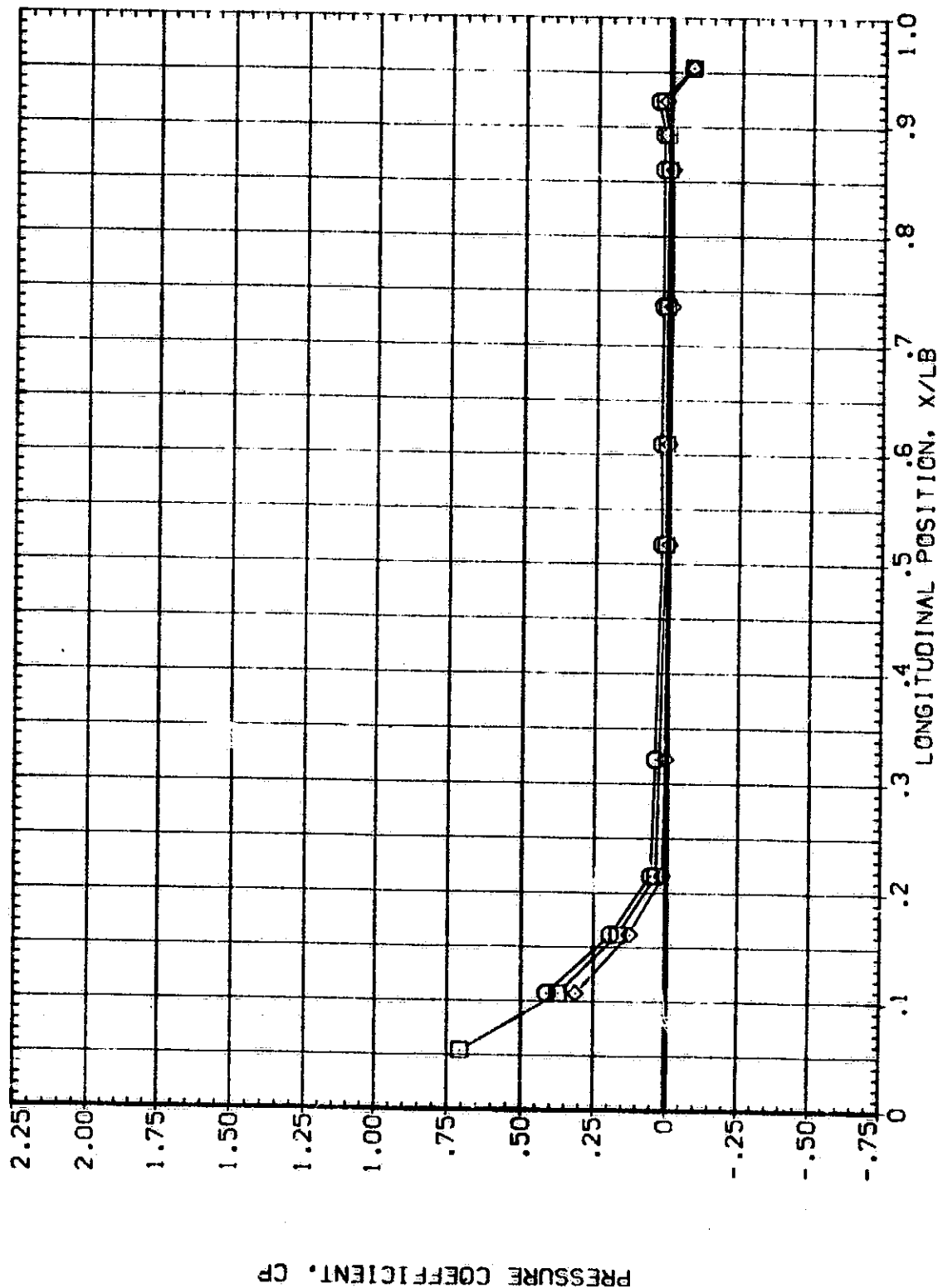


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA041)

SYMBOL

THETA 315.000  
326.000  
346.000

ALPHA -8.360

MACH 3.480

PARAMETRIC VALUES

BETA .000  
MOUNT 1.000  
PHI 225.000

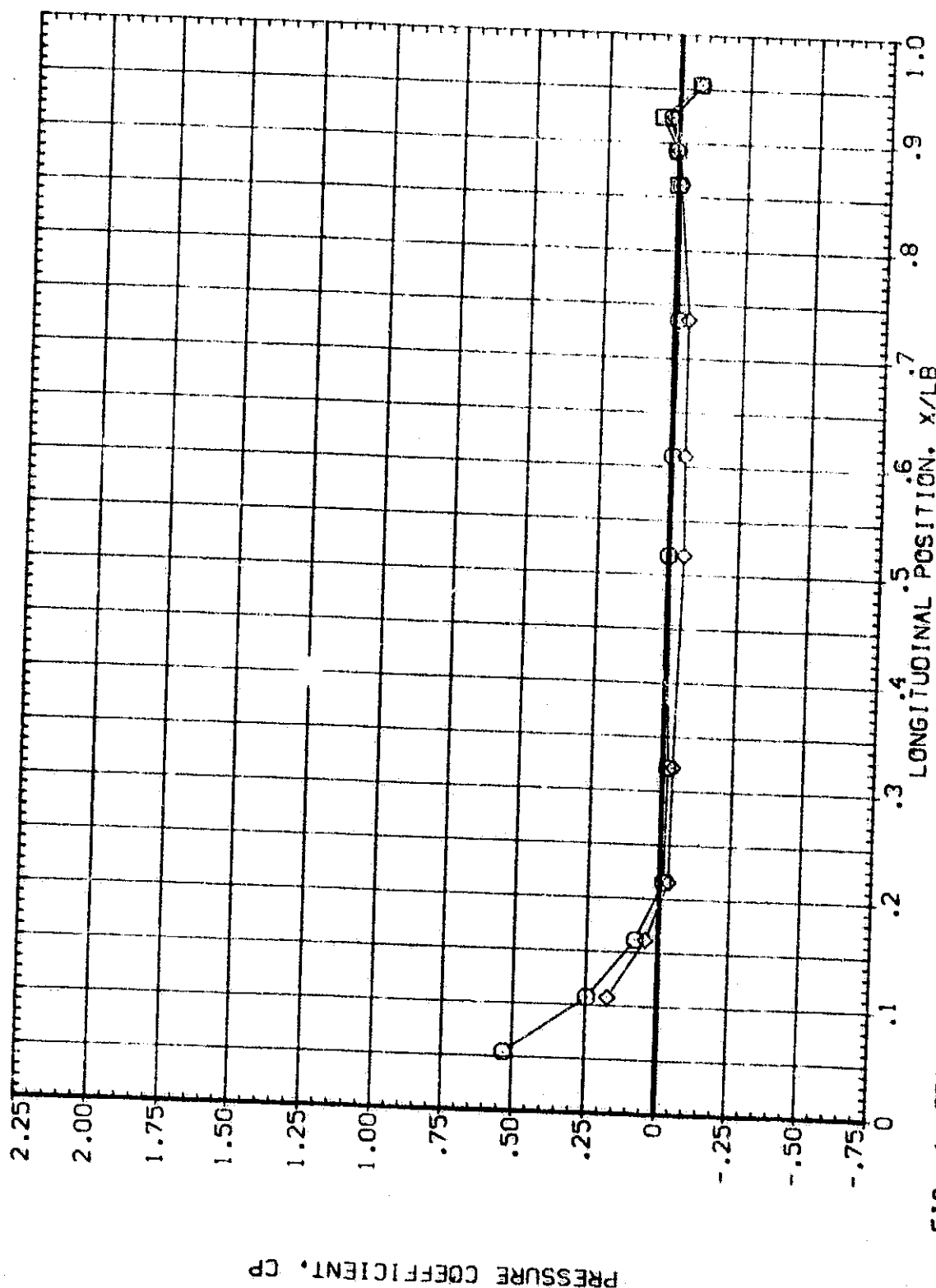


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA042)

SYMBOL	PARAMETRIC VALUES	
	THETA	ALPHA
○	.000	-4.330
□	14.000	3.480
◇	24.000	
	BETA	PHI
	1.000	225.000
	MOUNT	

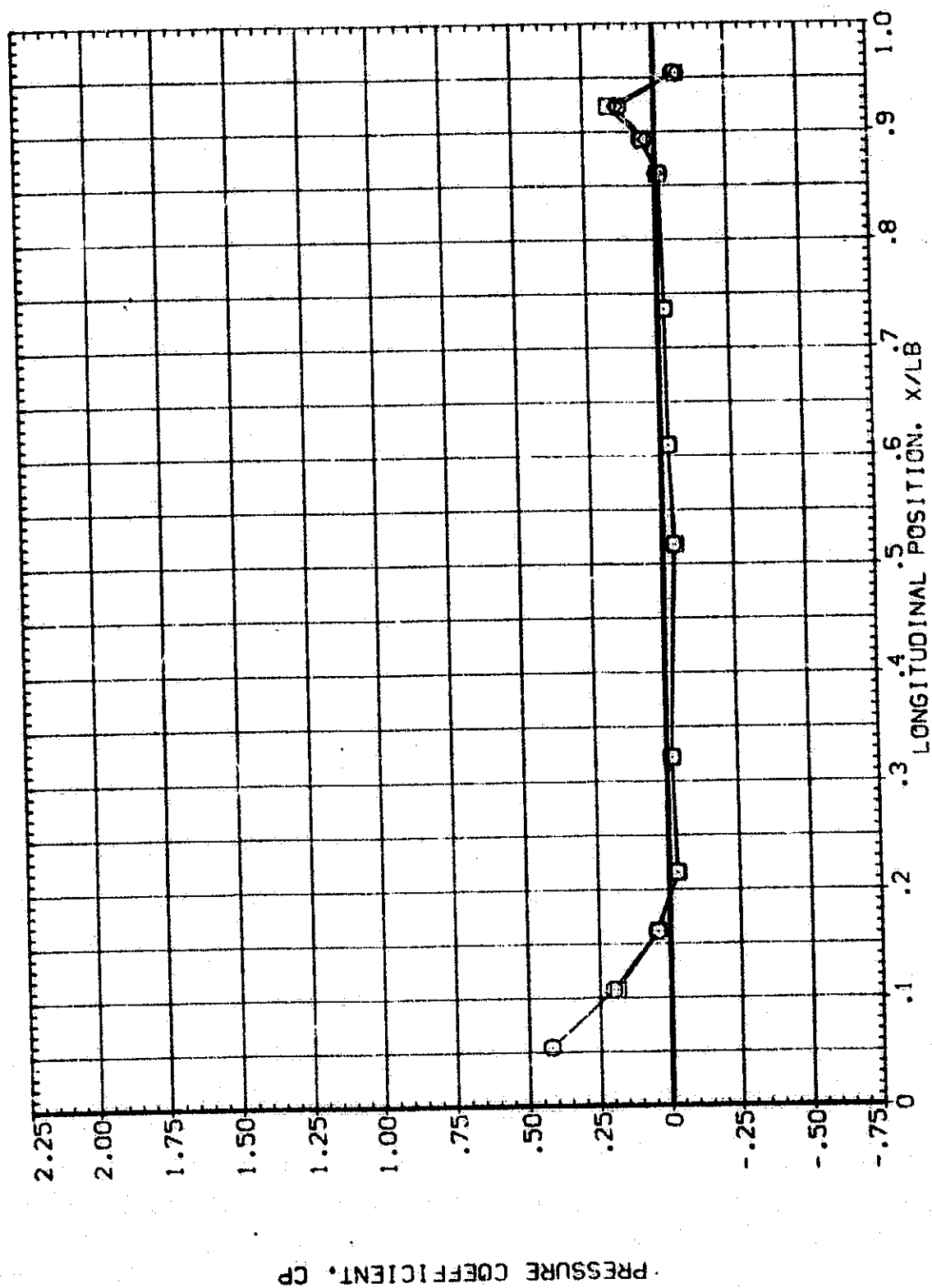


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA042)

SYMBOL  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 -4.330

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 OFFSET  
 PHI  
 225.000

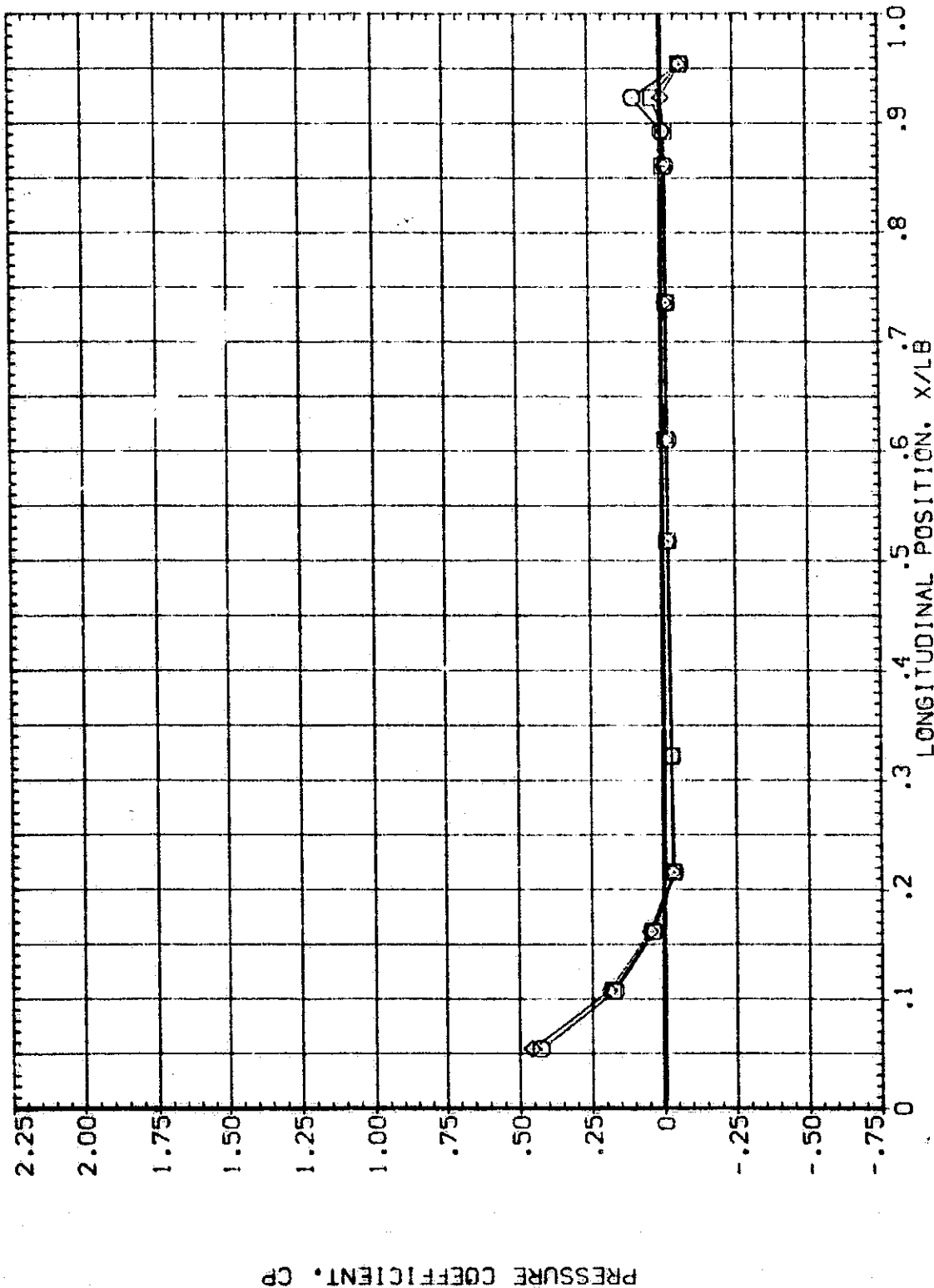


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA042)

SYMBOL

THETA  
112.500  
135.000  
157.500

ALPHA  
-4.330

MACH  
3.460

PARAMETRIC VALUES  
BETA  
MOUNT

.000  
1.000  
225.000

PHI  
OFFSET  
.000

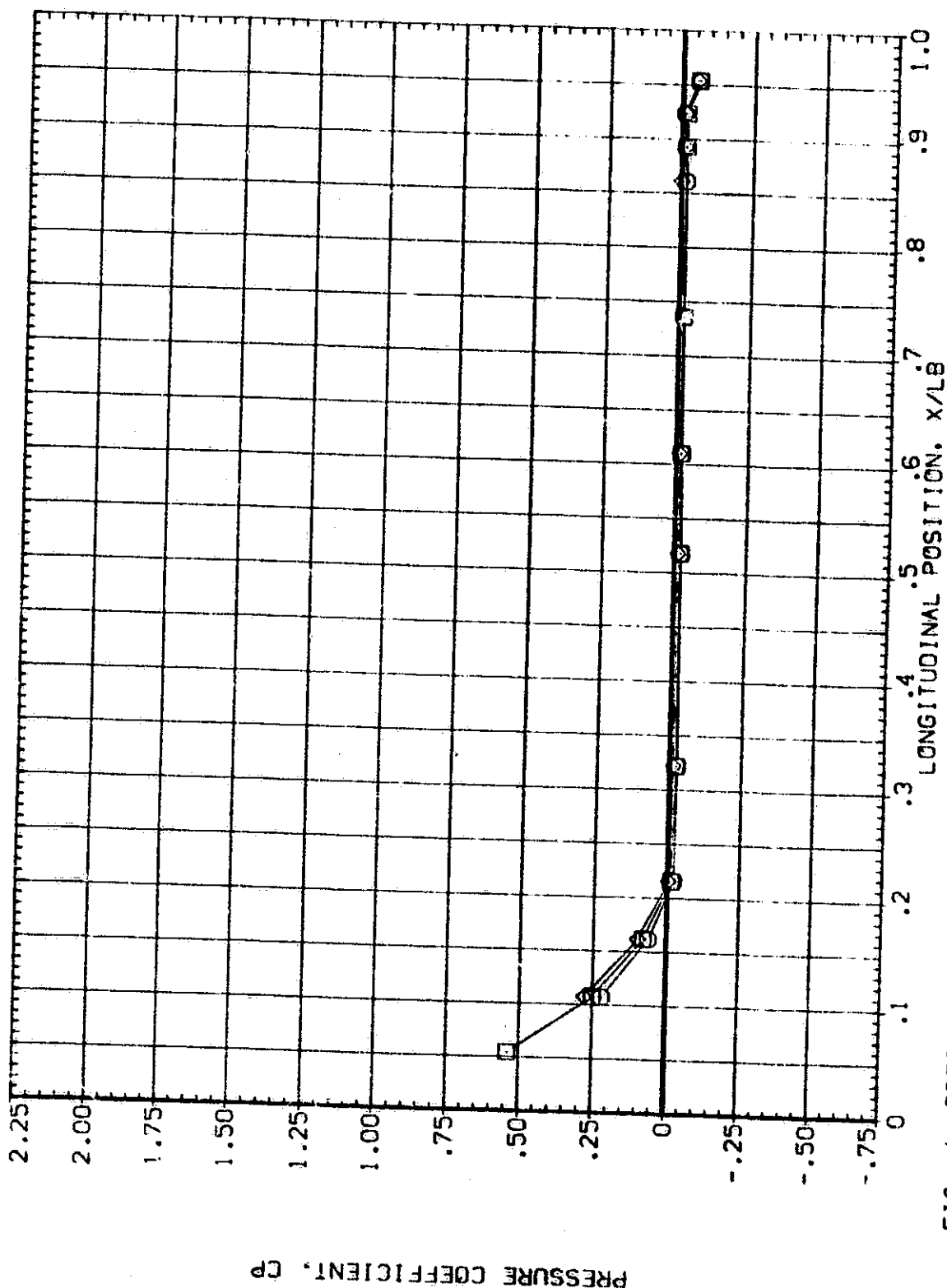


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA 180.000  
 202.500  
 225.000

ALPHA -4.330

MACH 3.480

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI 225.000

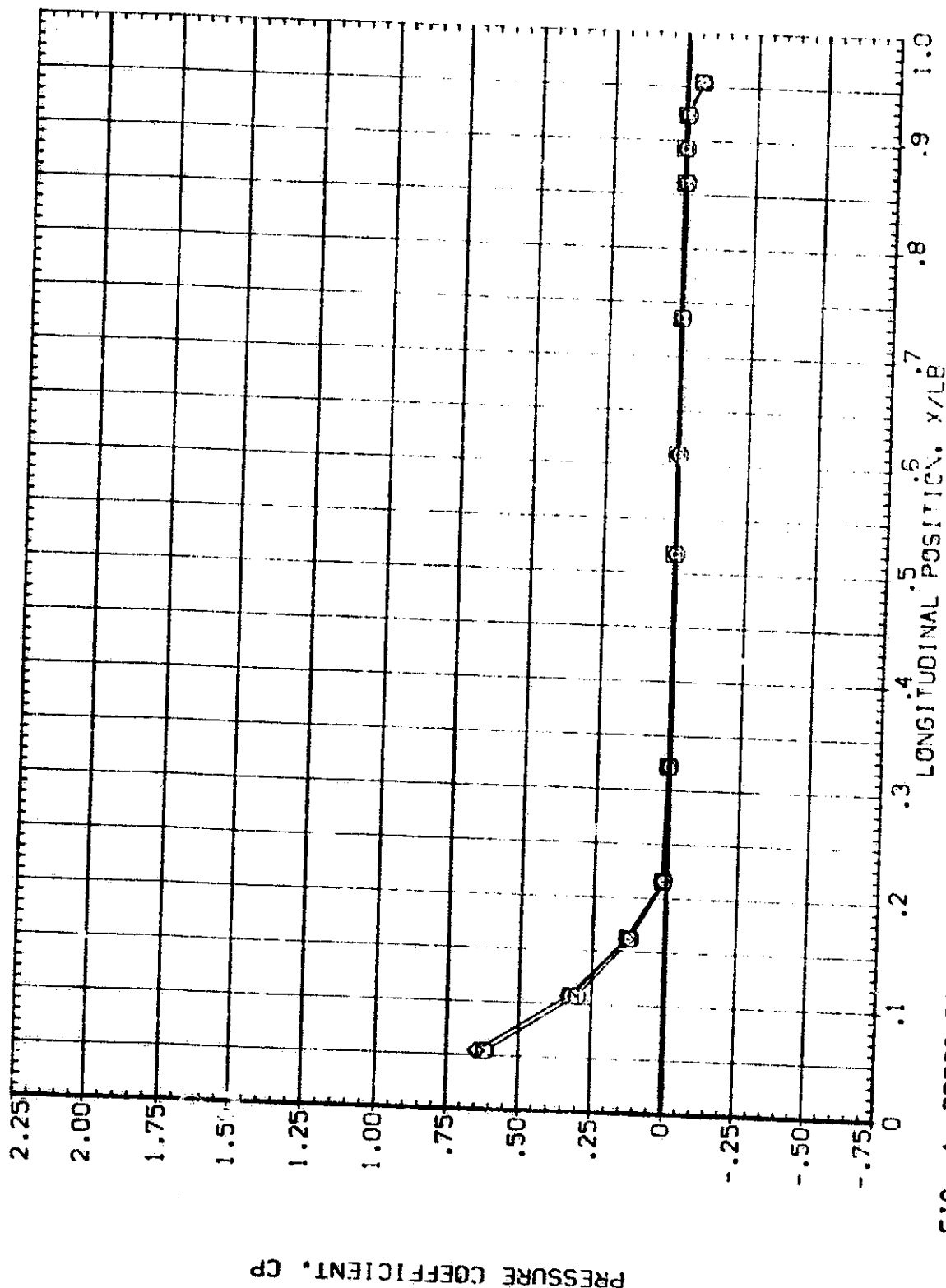


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(PIA042)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
-4.330

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT  
1.000  
1.000  
PHI  
225.000  
.000  
225.000

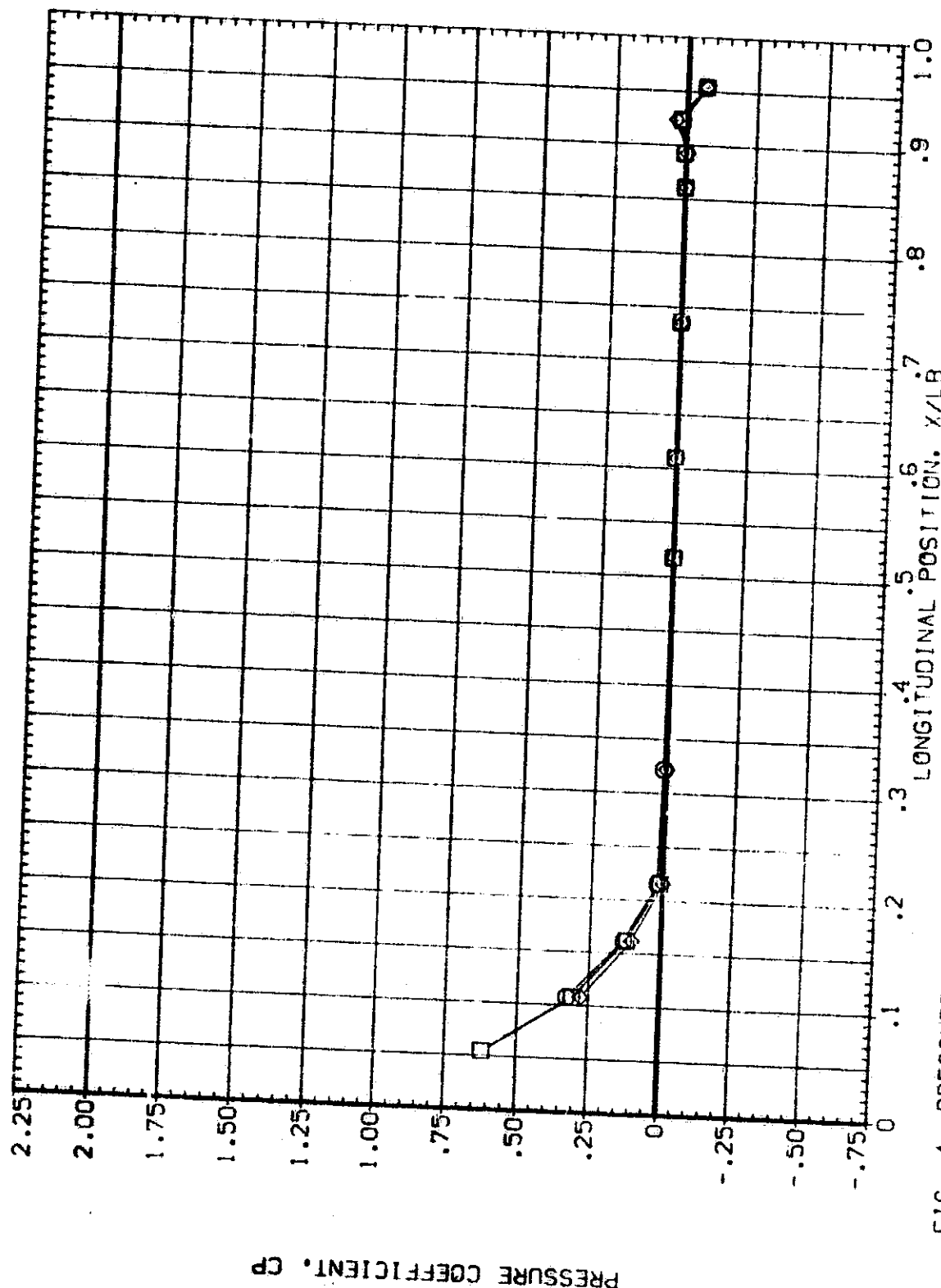


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	-4.330	3.480	.000	OFFSE: .000
□	326.000			1.000	PHI 225.000
◇	346.000				

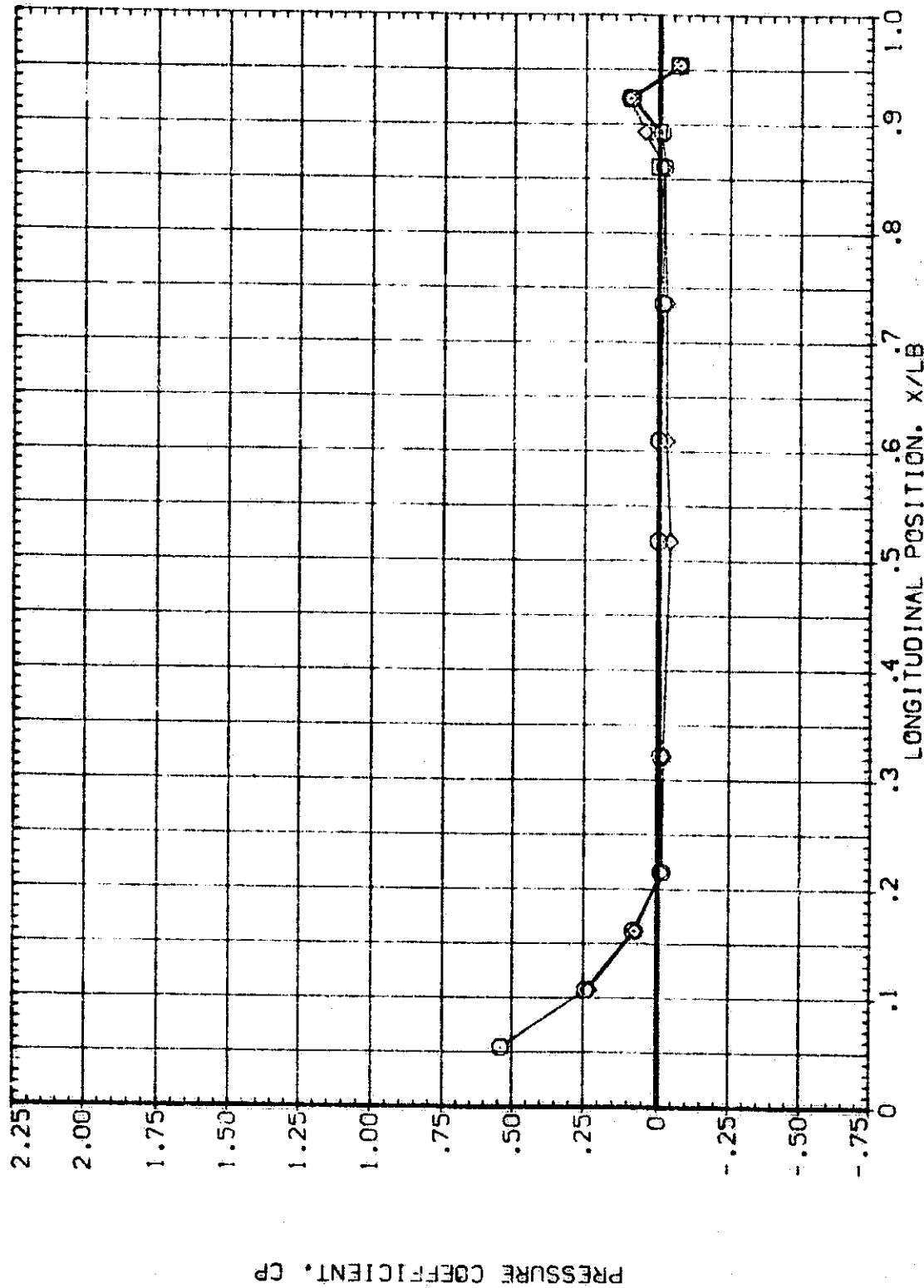


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A043)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	.000	14.000	24.000	-.280	3.480		BETA	OFFSET	PHI	
○							HOUNT	.000		.000
□								1.000		225.000
◇										

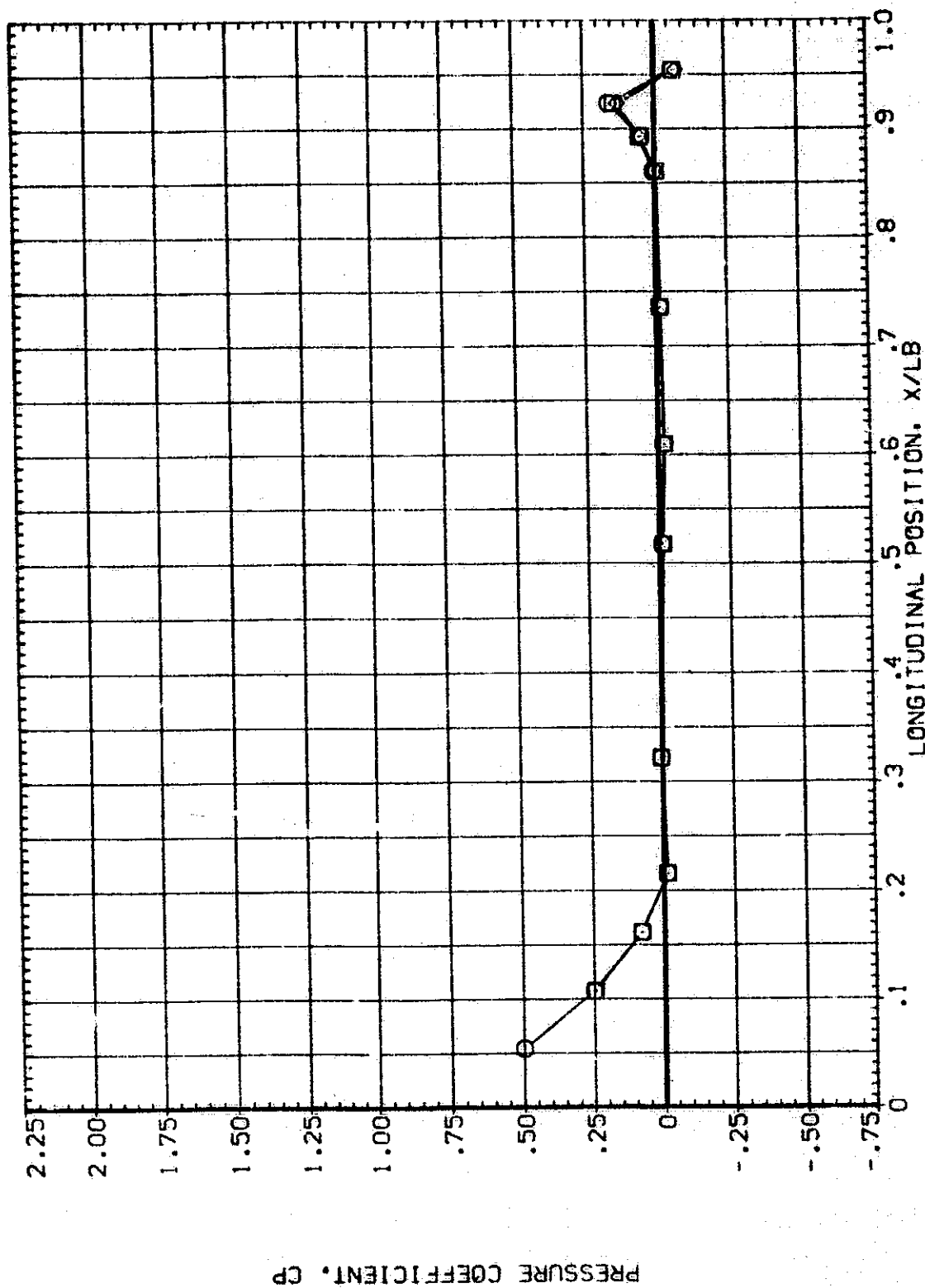


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A043)

SYMBOL THETA ALPHA MACH  
 O 45.000  
 □ 67.500  
 ◇ 90.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI 225.000

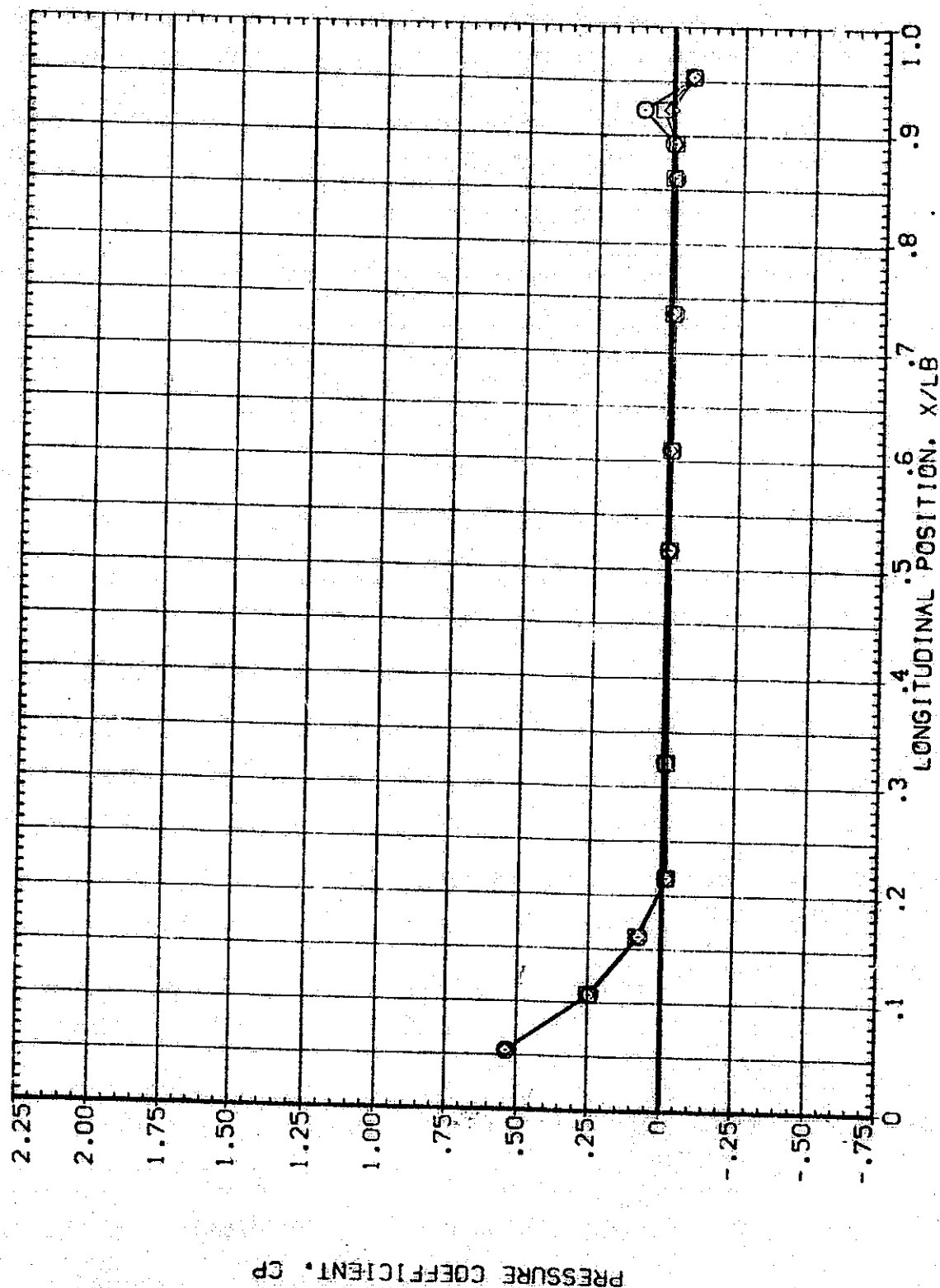


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA043)

SYMBOL

THETA  
112.500  
135.000  
157.500

ALPHA  
-.280

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

.000  
225.000

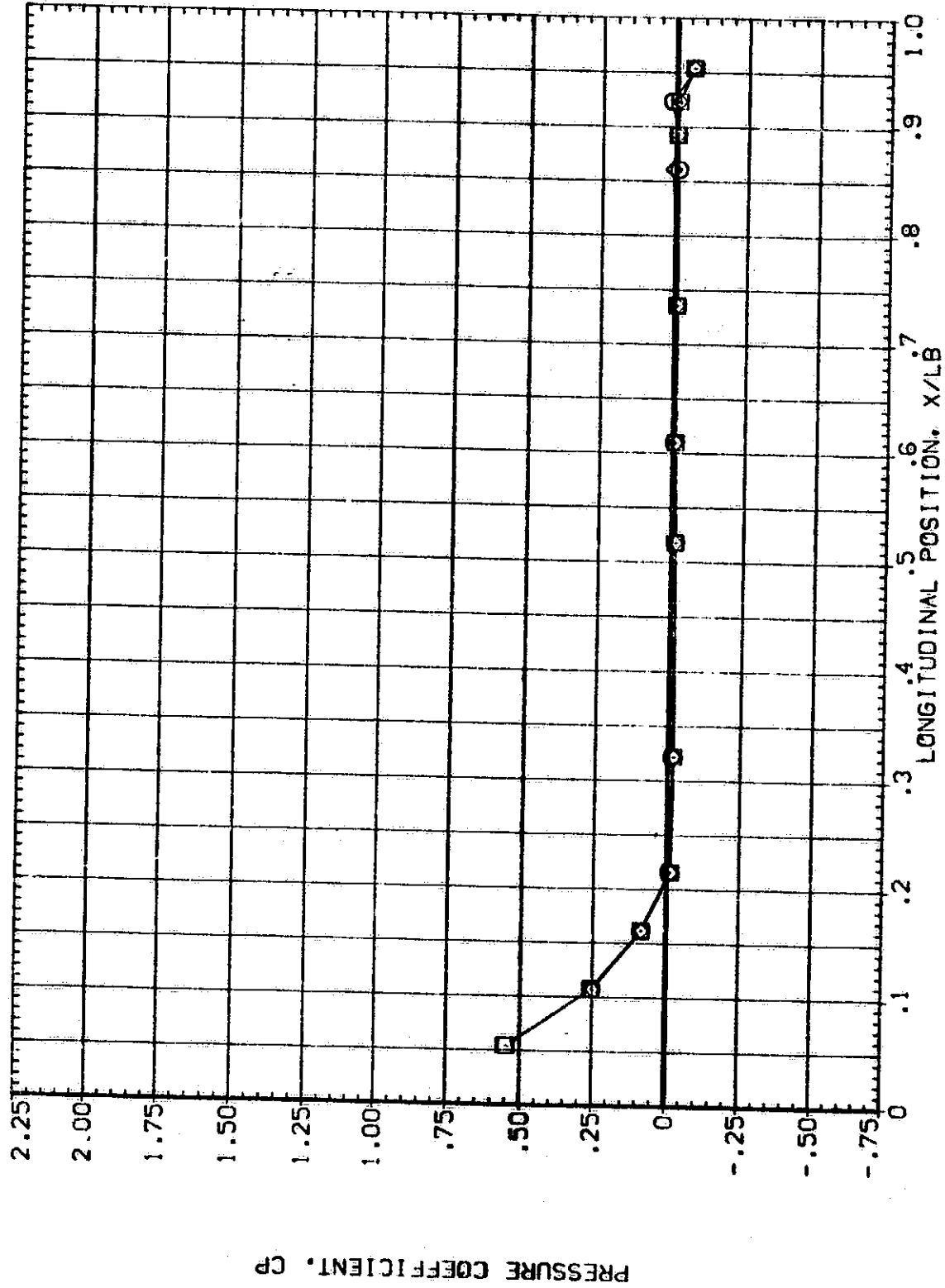


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A043)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
-.280

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT  
1.000  
PHI  
225.000  
OFFSET  
.000

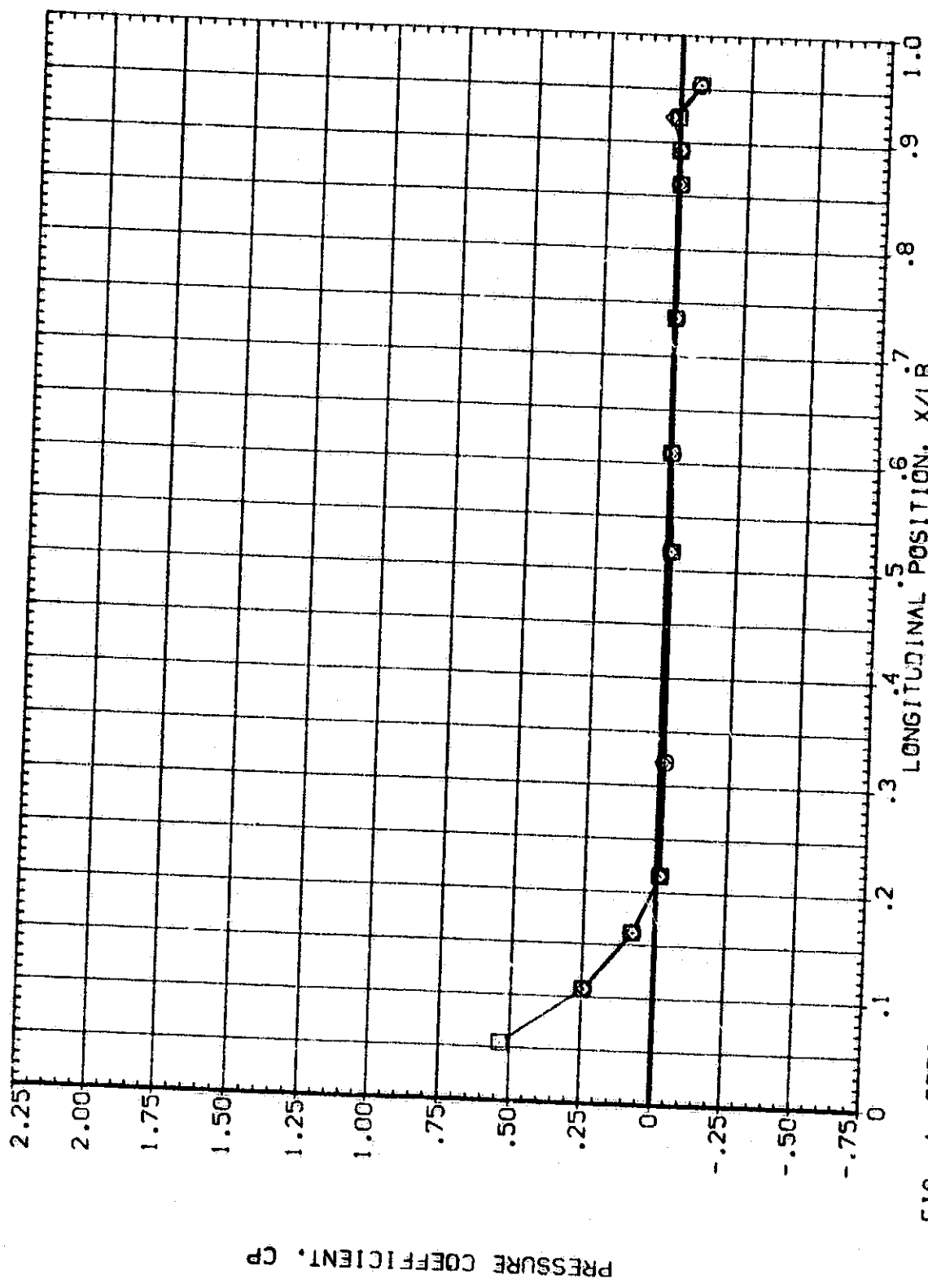


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(P1A043)

SYMBOL  
○  
□  
◇

THETA 315.000  
326.000  
346.000  
ALPHA -.280  
MACH 3.480

BETA MOUNT  
PARAMETRIC VALUES  
.000 .000 .000  
1.000 OFFSET  
225.000 PHI

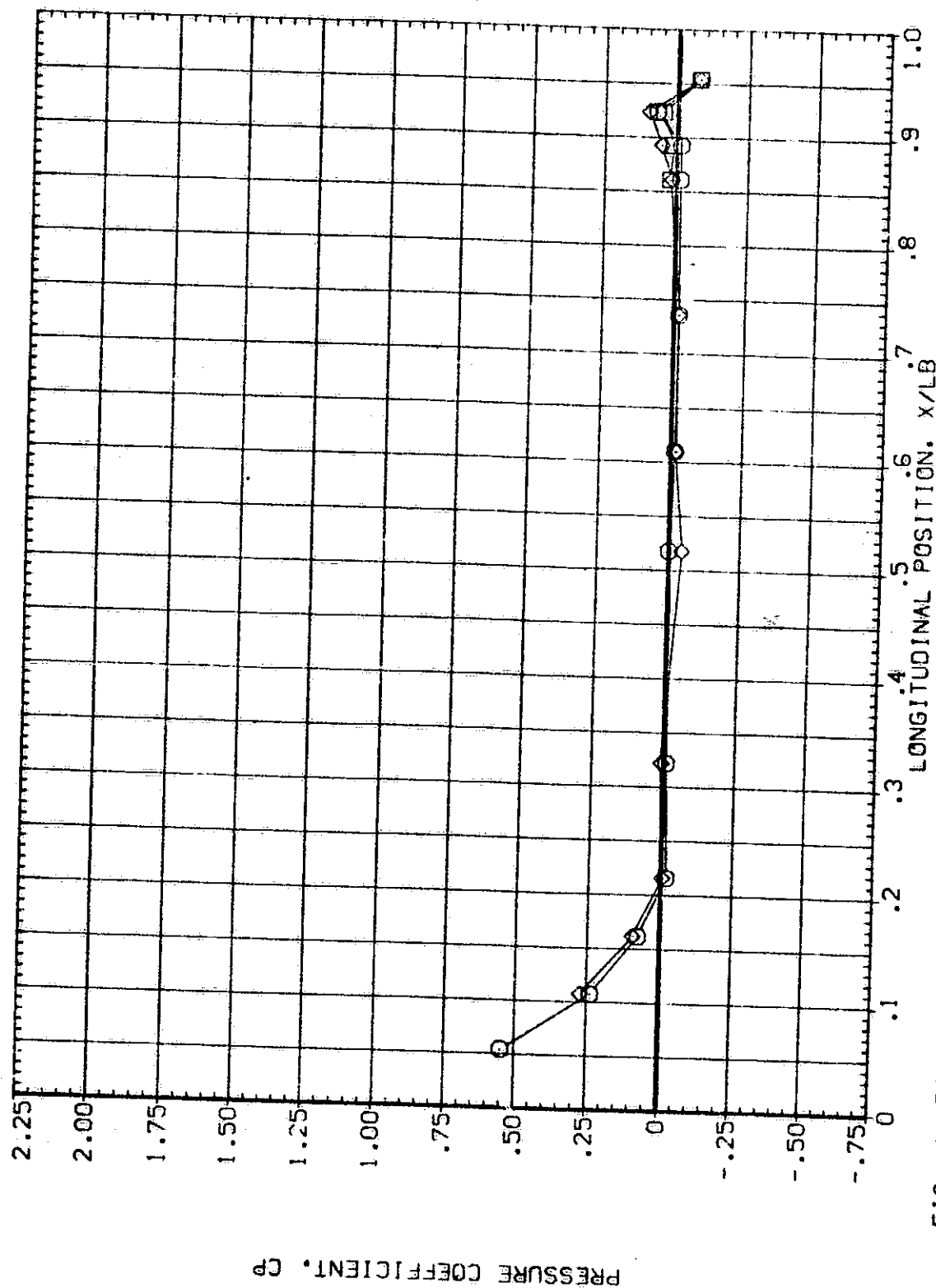


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (P1A044)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	.000	14.000	.000	3.770	.000	3.480	BETA	.000	OFFSET	.000
◇	24.000						MDUNT	1.000	PHI	225.000

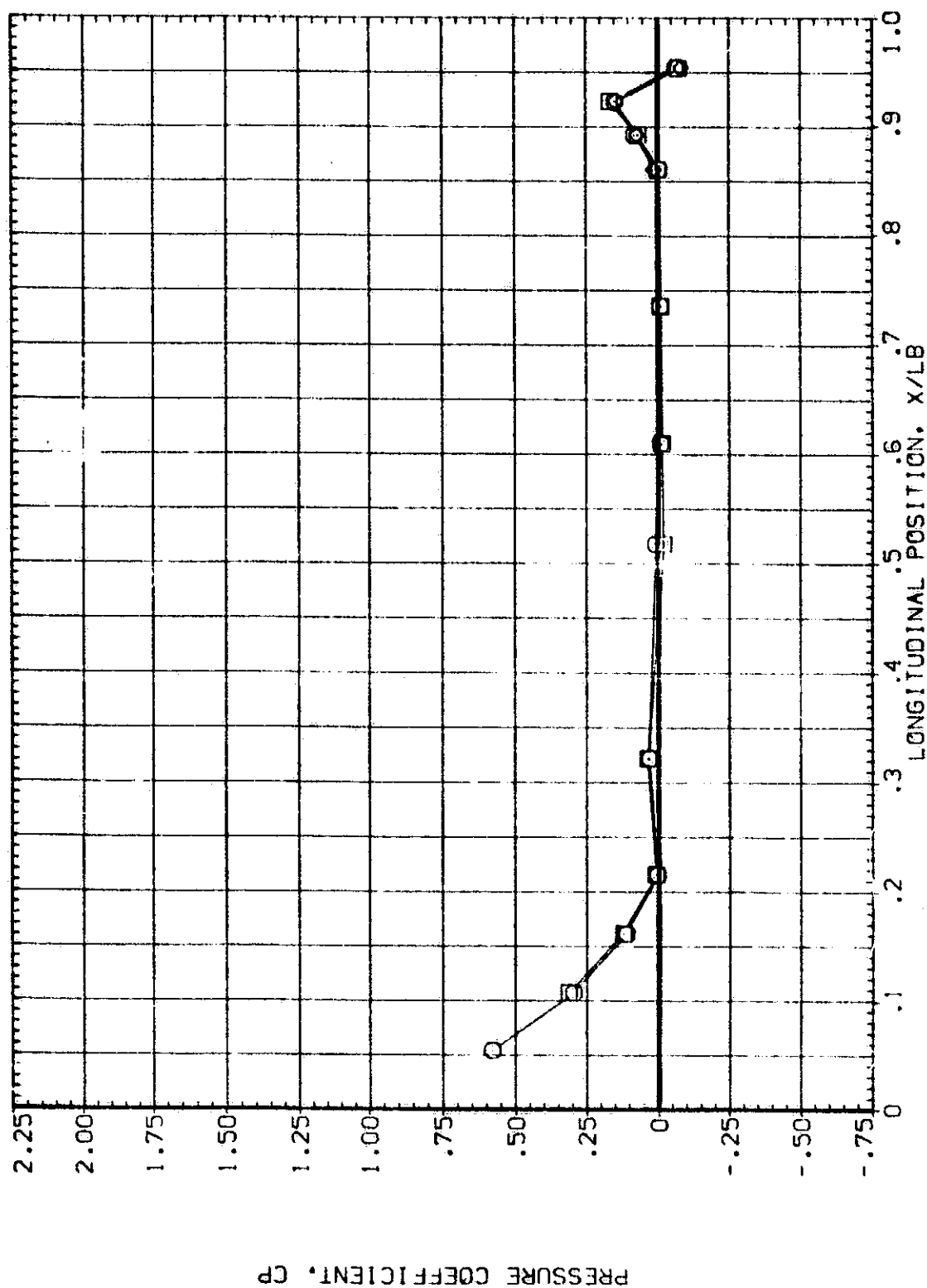


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○ □ ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 3.770

MACH  
 3.480

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 PHI  
 225.000

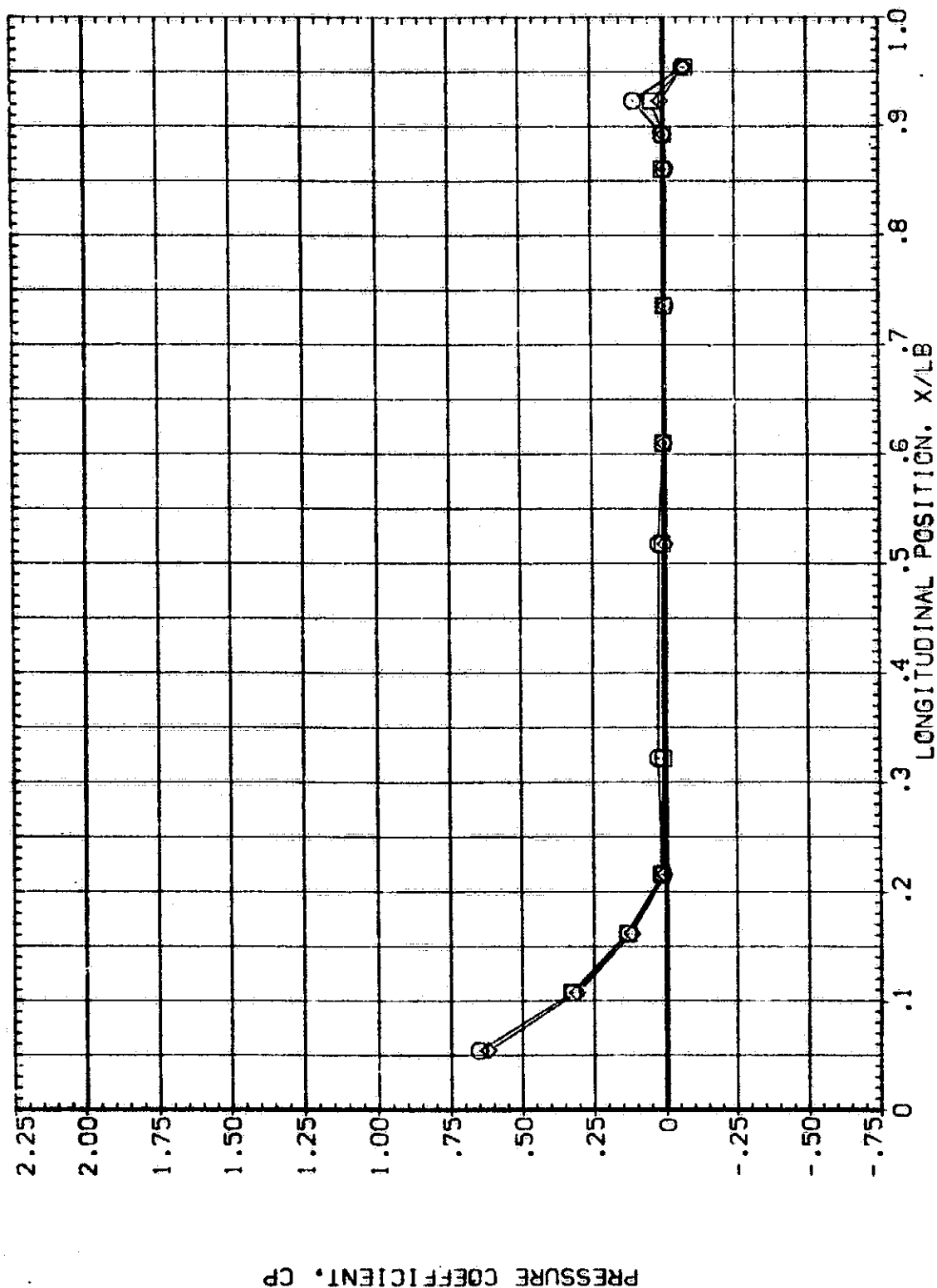


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



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# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA044)

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 225.000

THETA ALPHA MACH  
 112.500 3.770 3.480  
 135.000  
 157.500

SYMBOL  
 ◇  
 □  
 ○

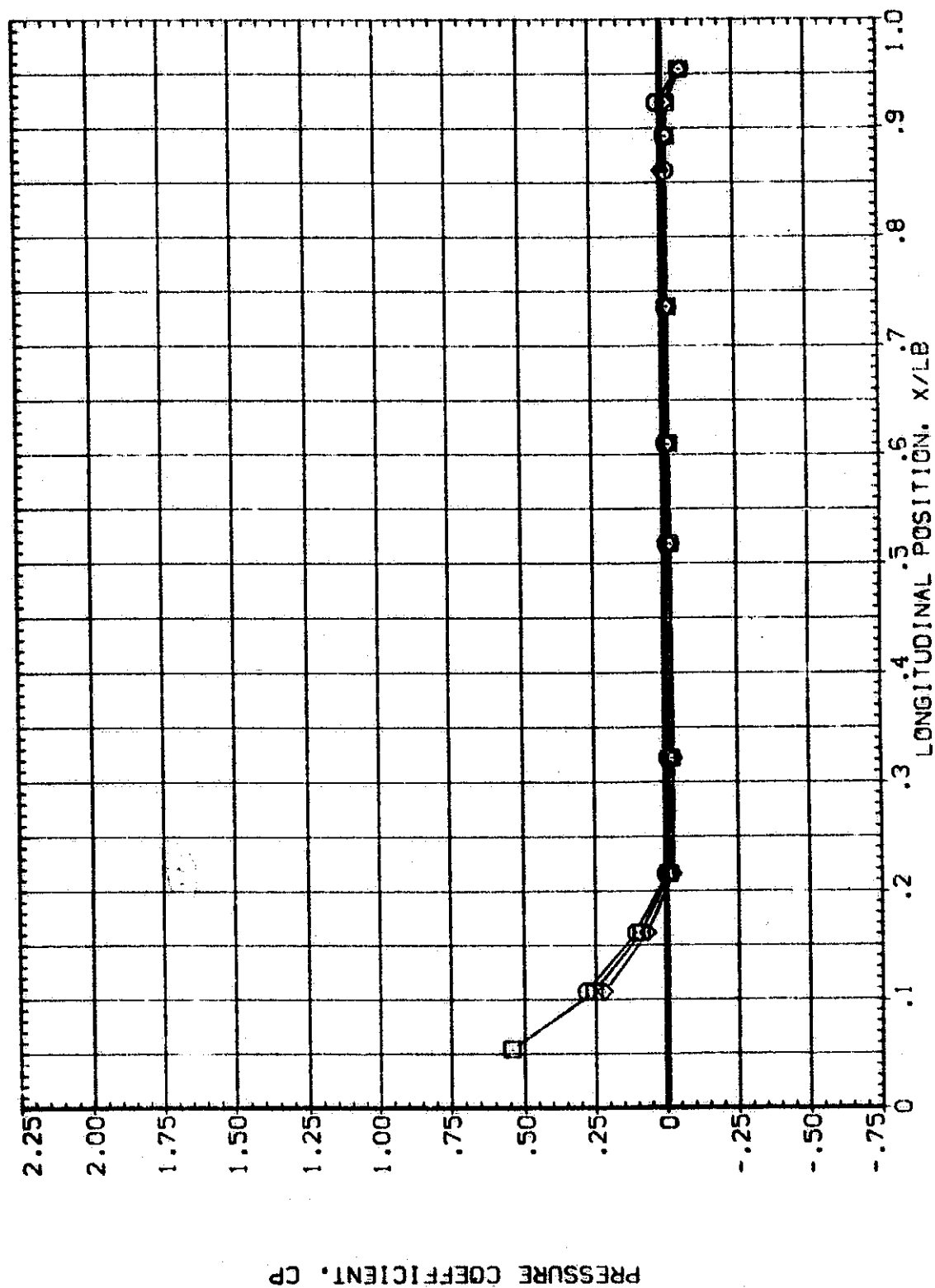


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	180.000	3.770	3.480	.000	OFFSET
□	202.500			1.000	PHI
◇	225.000			225.000	

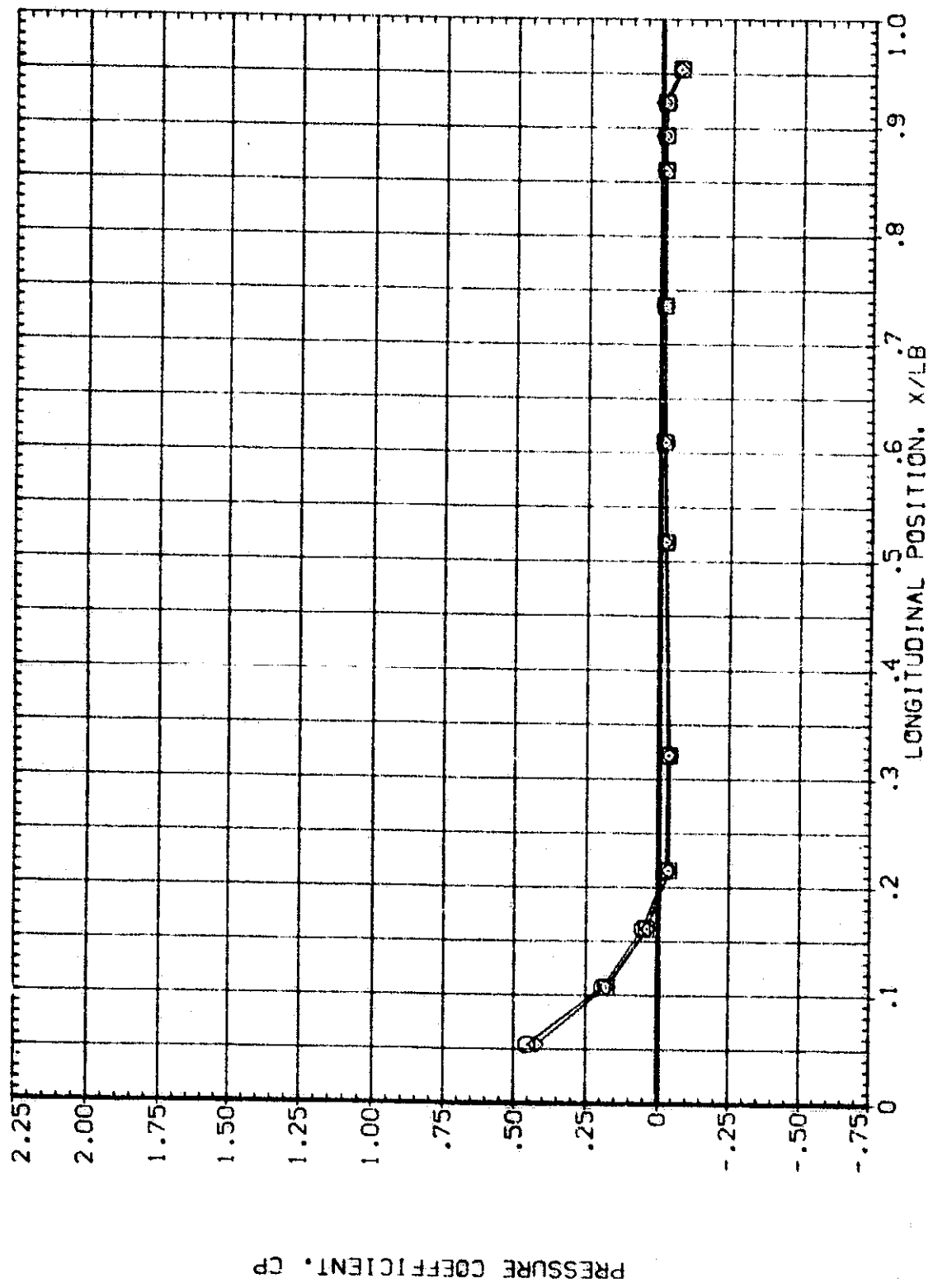


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA044)

PARAMETRIC VALUES  
 .000 .000  
 OFFSET PHI  
 225.000

BETA  
 MOUNT

ALPHA MACH  
 3.770 3.480

THETA  
 247.500  
 270.000  
 292.500

SYMBOL  
 ◇  
 □  
 ◇

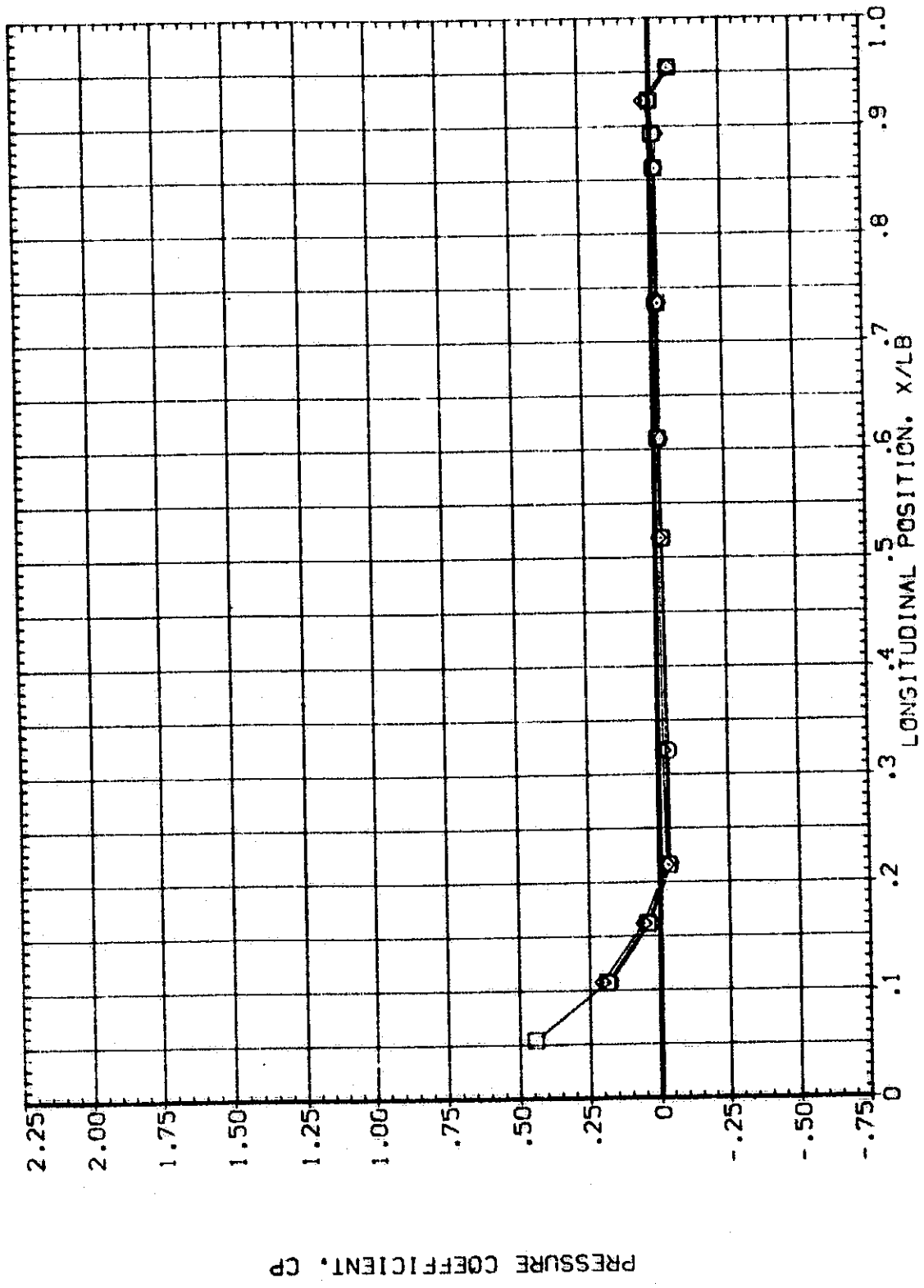


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A044)

SYMBOL  
 315.000  
 325.000  
 346.000

THETA  
 3.770  
 3.480

ALPHA  
 3.770  
 3.480

MACH  
 3.770  
 3.480

PARAMETRIC VALUES  
 BETA  
 HOUNT  
 .000  
 1.000  
 .000  
 225.000  
 .000  
 .000  
 .000

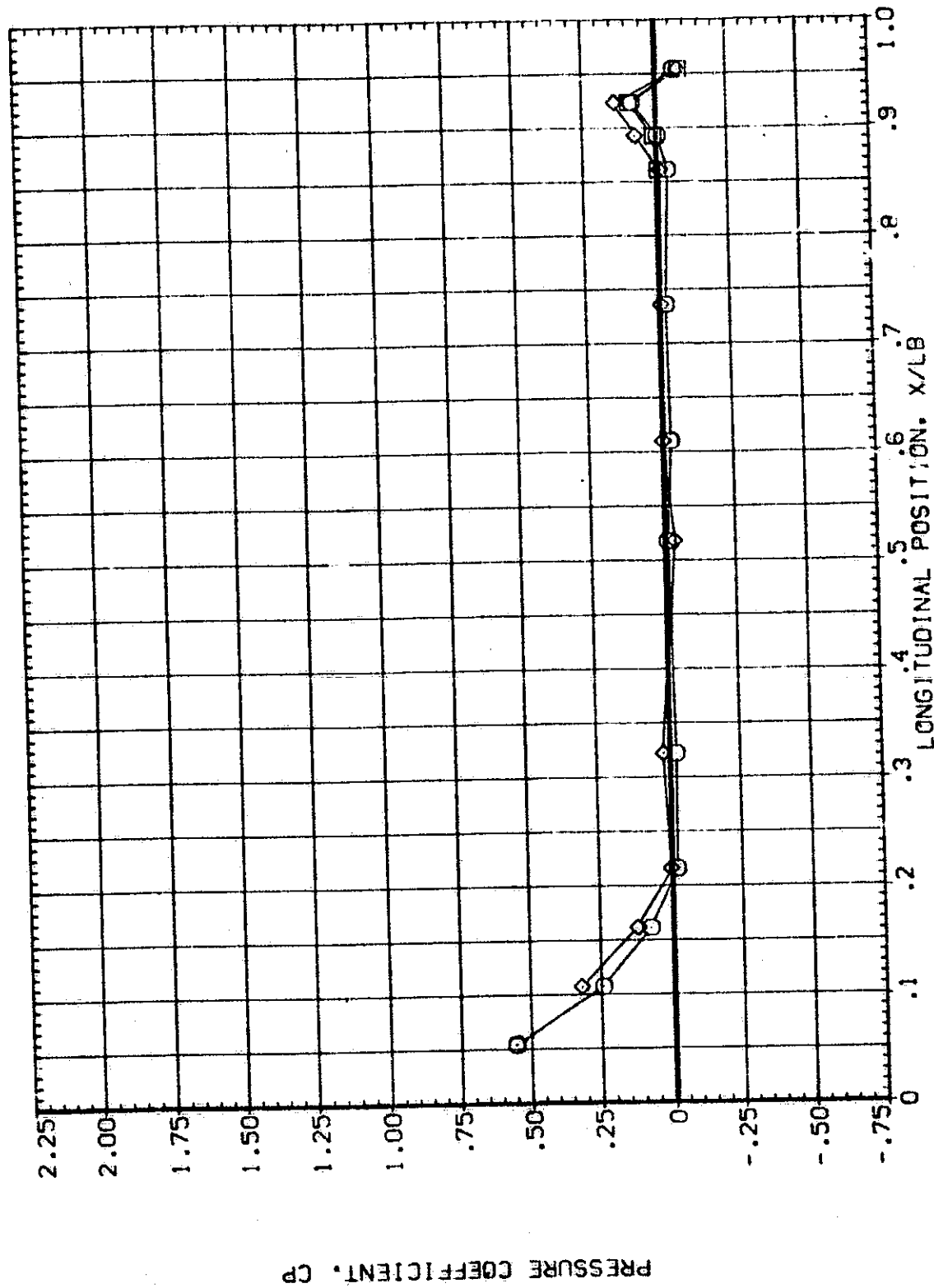


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA045)

SYMBOL THETA ALPHA MACH  
 O .000 7.800 3.480  
 □ 14.000  
 ◇ 24.000

PARAMETRIC VALUES  
 .000 OFFSET .000  
 1.000 PHI 225.000

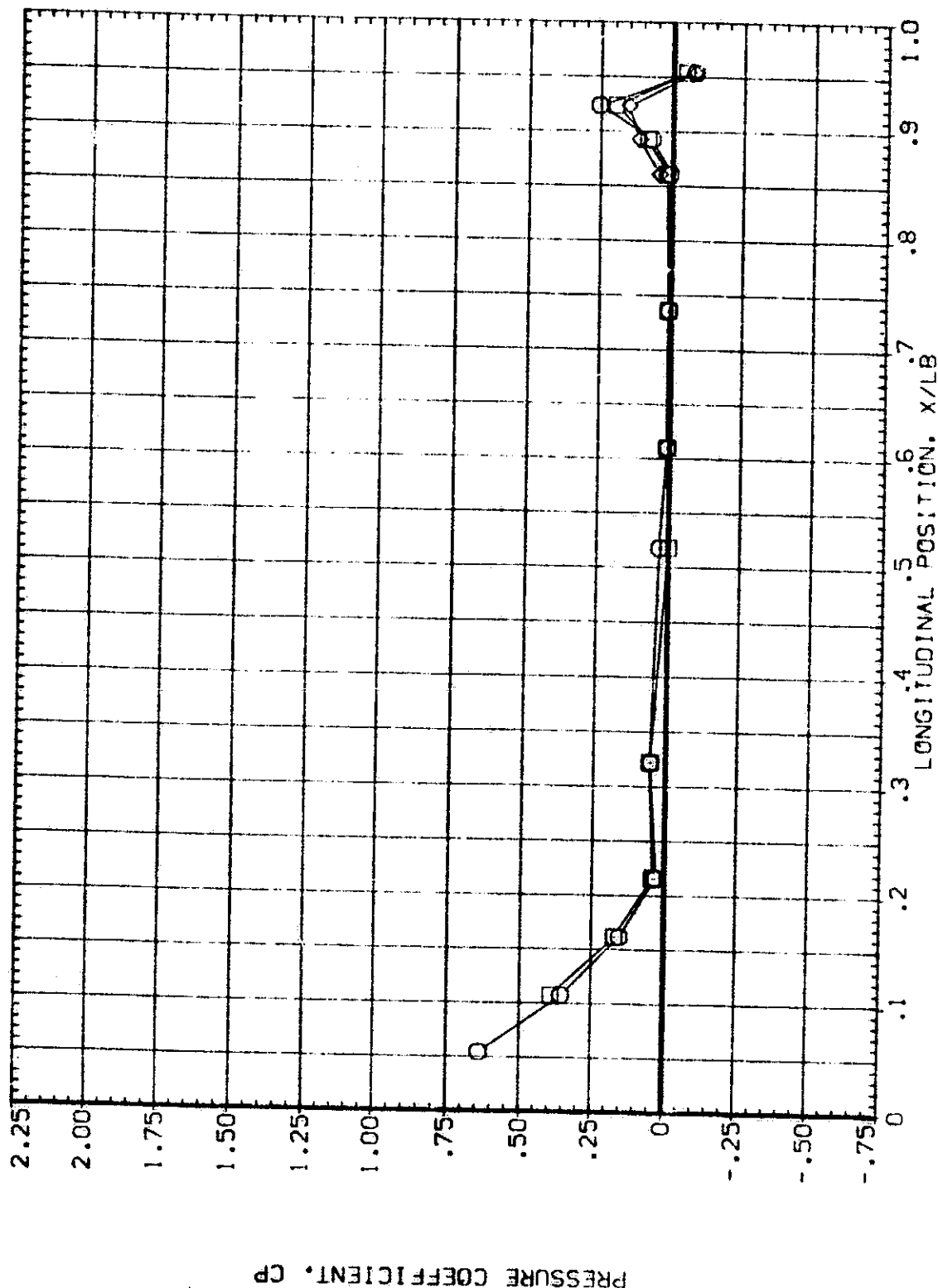


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A045)

SYMBOL  
 ○  
 □  
 ◇

THETA 45.000  
 67.500  
 90.000

ALPHA 7.800

MACH 3.480

PARAMETRIC VALUES

BETA .000  
 MOUNT 1.000

OFFSET .000  
 PHI 225.000

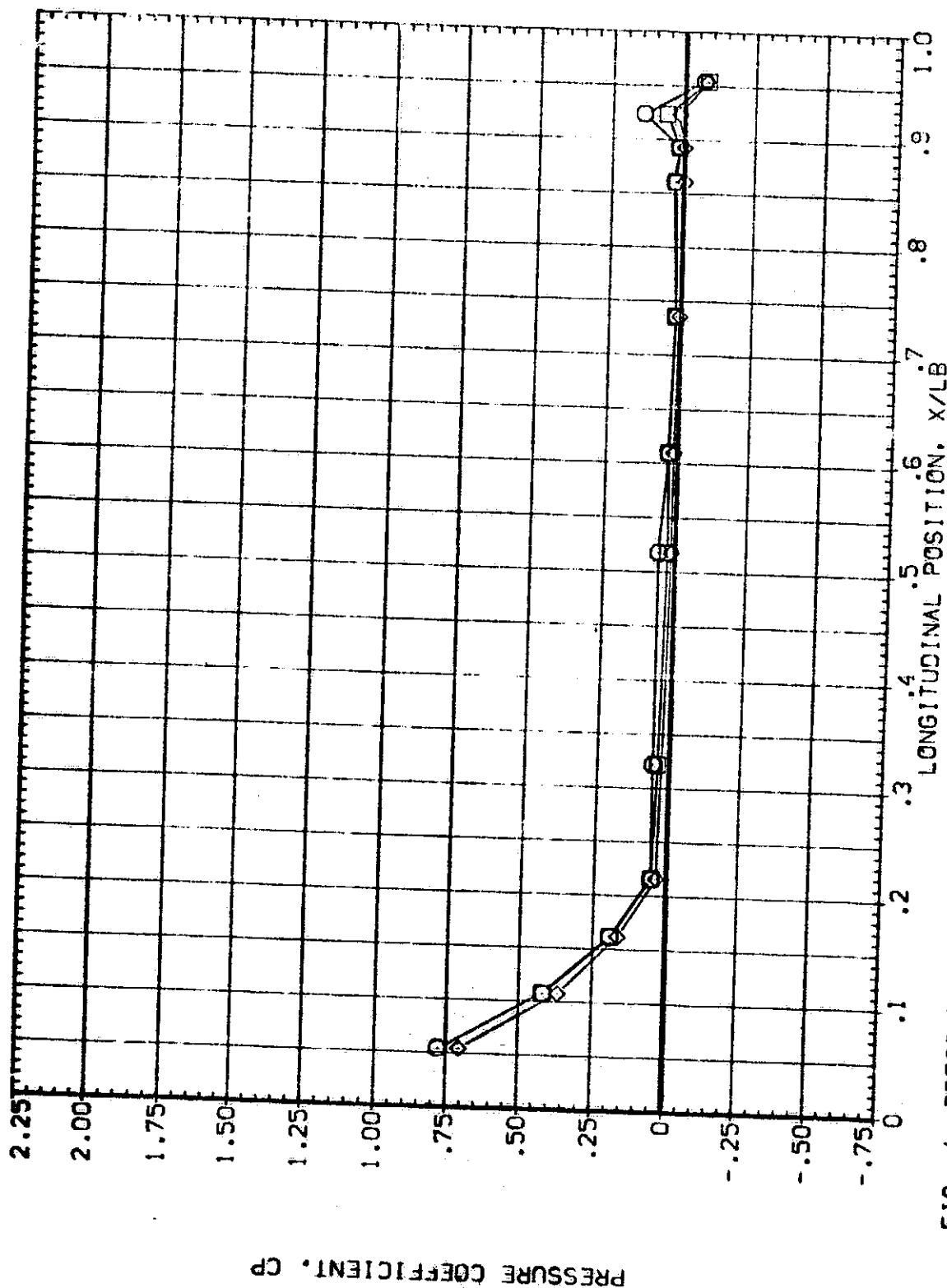


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A045)

SYMBOL

THETA  
112.500  
135.000  
157.500

ALPHA  
7.900

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI  
225.000

.000  
225.000

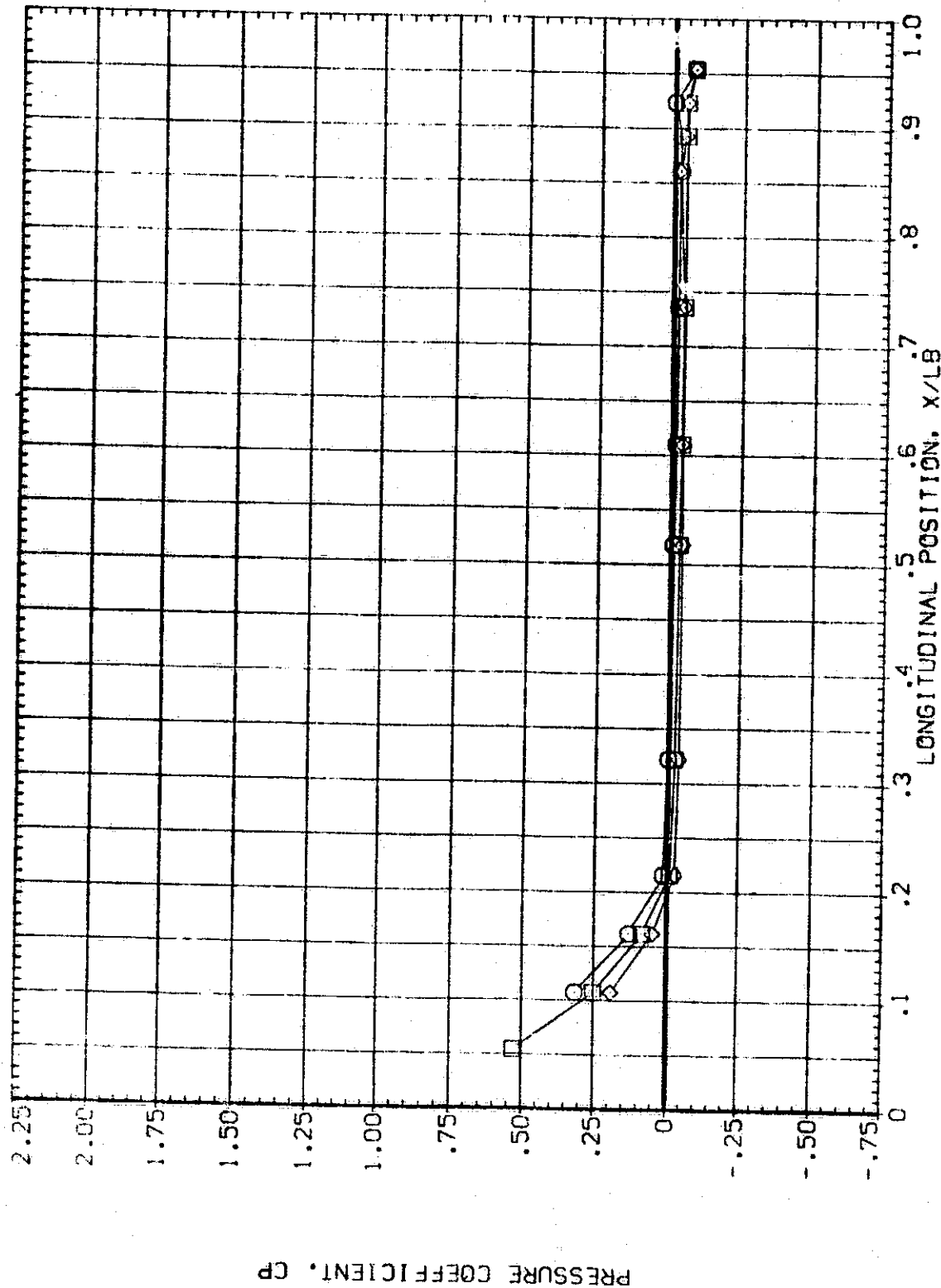


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA045)

SYMBOL THETA ALPHA MACH  
 180.000 7.800 3.480  
 202.500  
 225.000

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHI 225.000

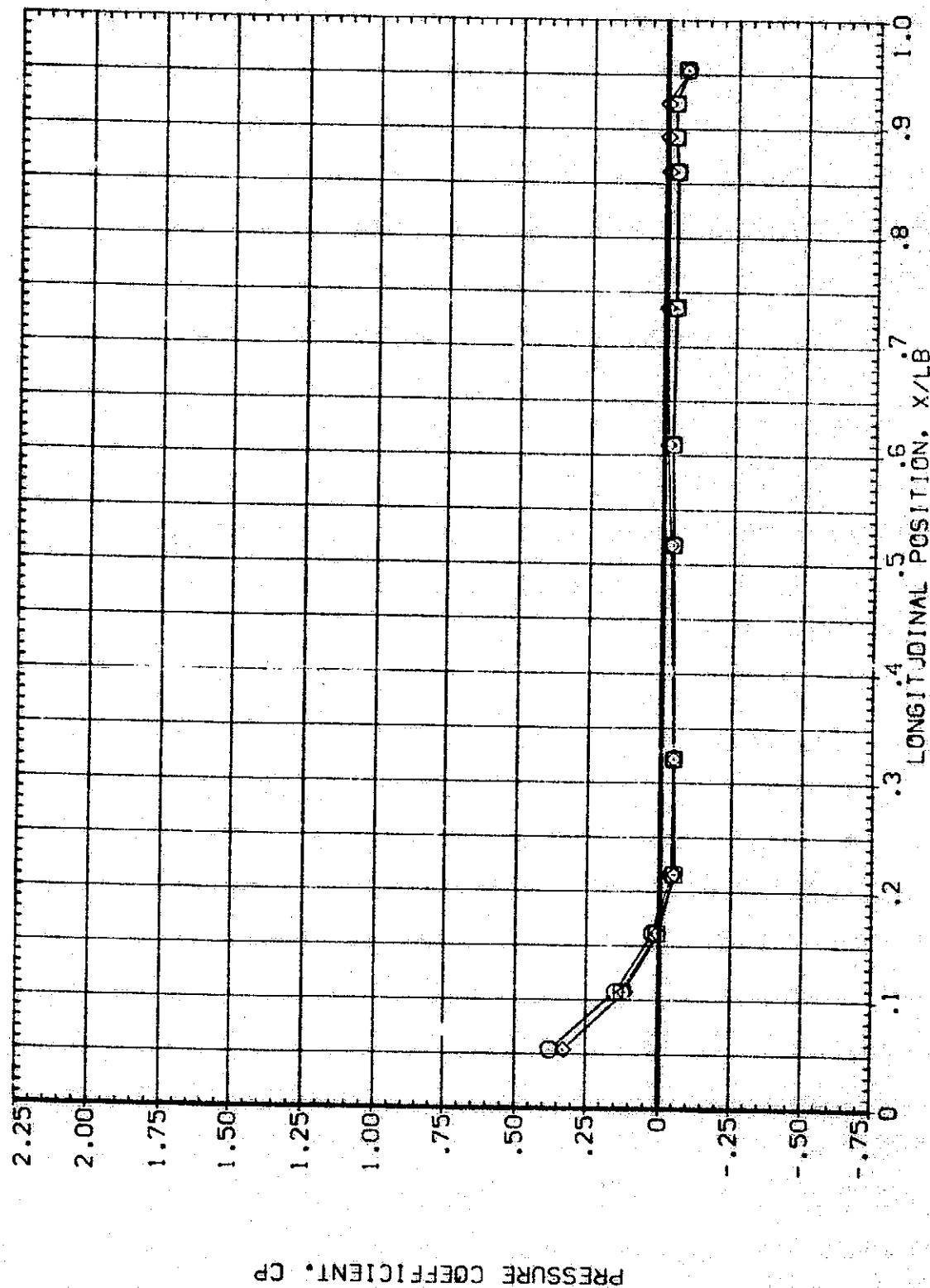


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A045)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	7.800	3.480	MOUNT	.000	225.000
□	270.000					
◇	292.500					

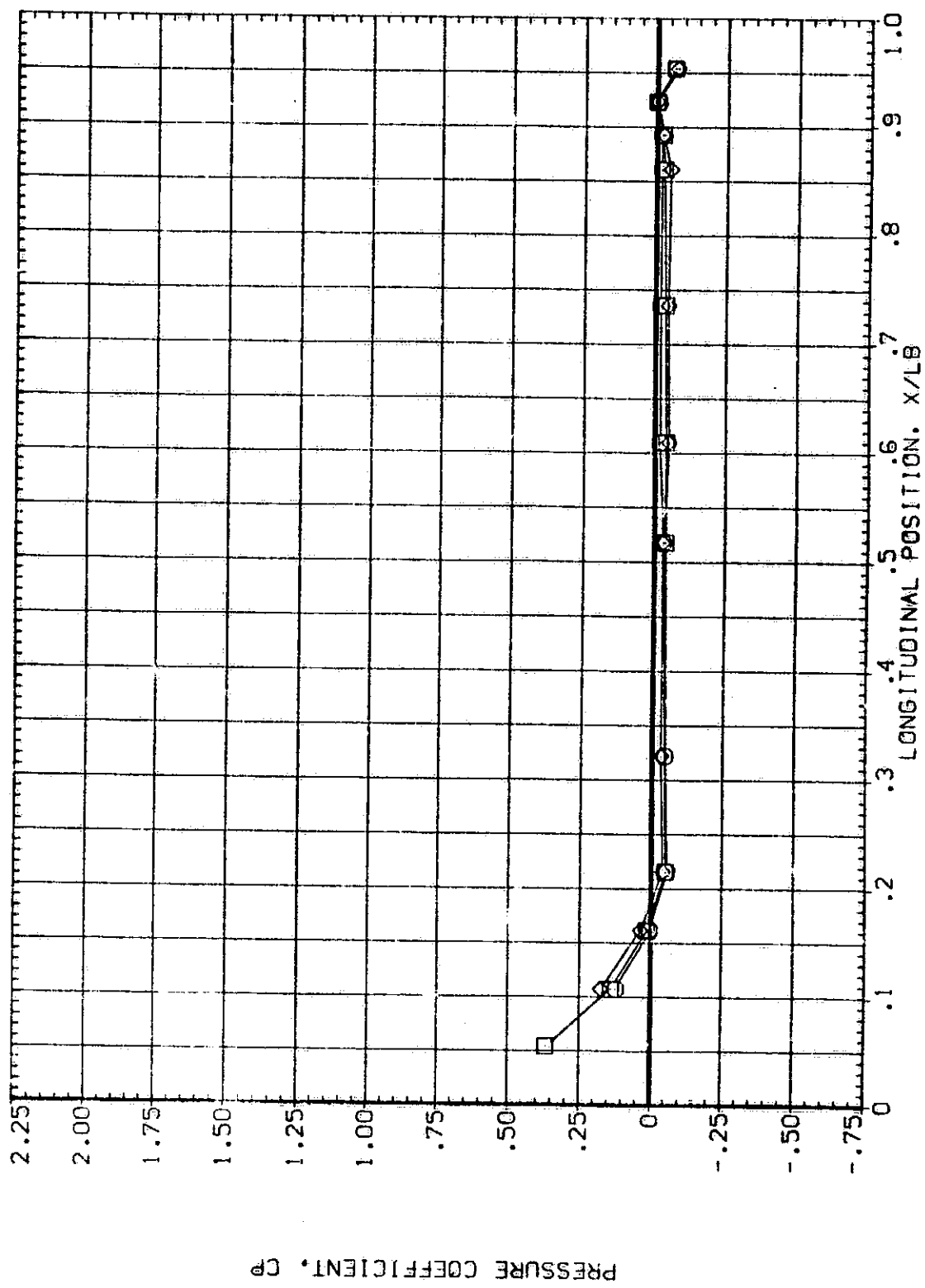


FIG. 4 PRESSURE DISTRIBUTION OVER ET - Y1 MODEL WITH PROTUBERANCES



SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	7.800	3.480	MDUNT	.000
□	326.000			PHI	.000
◇	346.000				225.000

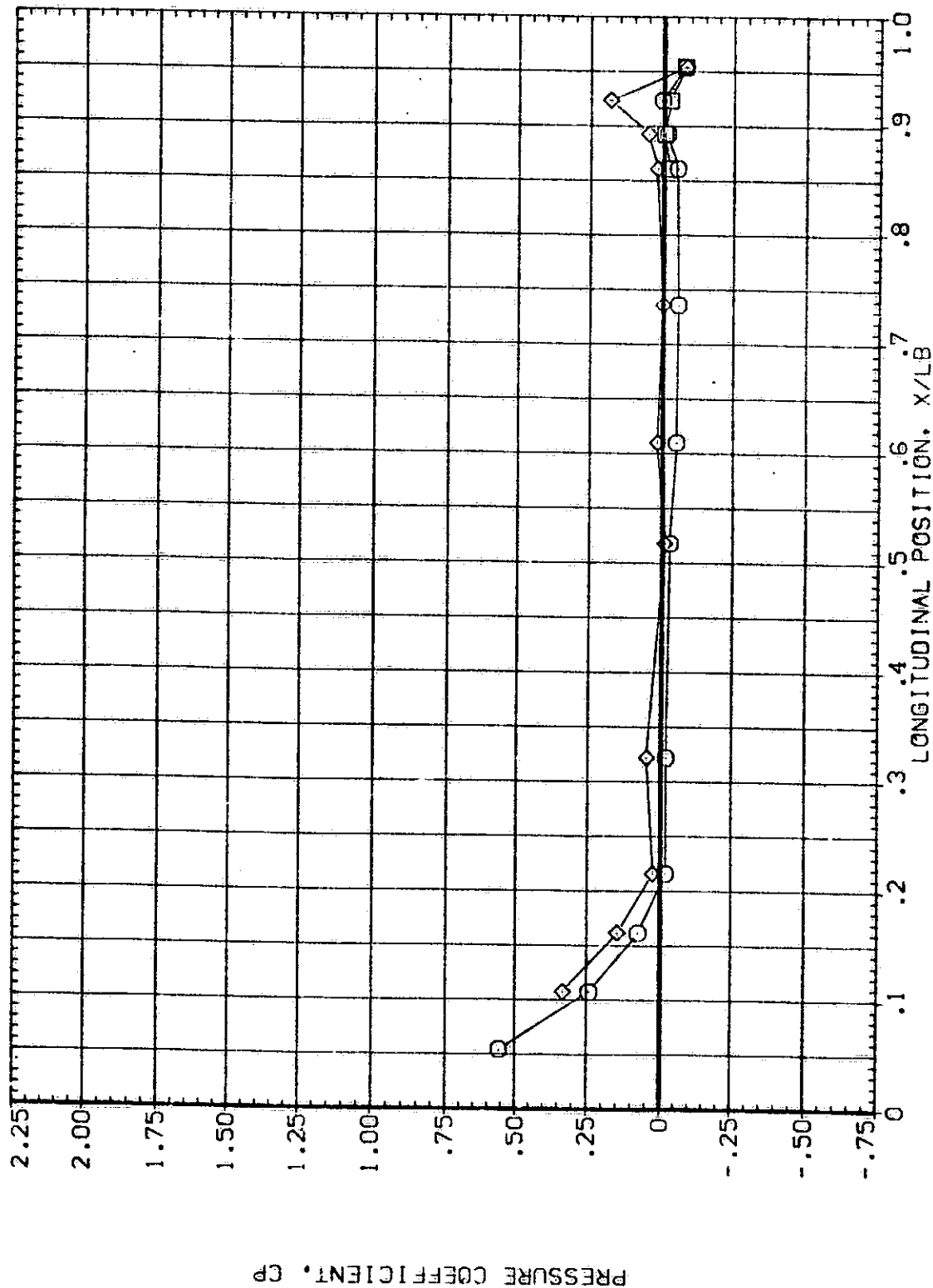


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MC C 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA046)

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 225.000

BETA  
 MDUNT

ALPHA MACH  
 12.520 3.480

THETA  
 .000  
 14.000  
 24.000

SYMBOL  
 □  
 ◇

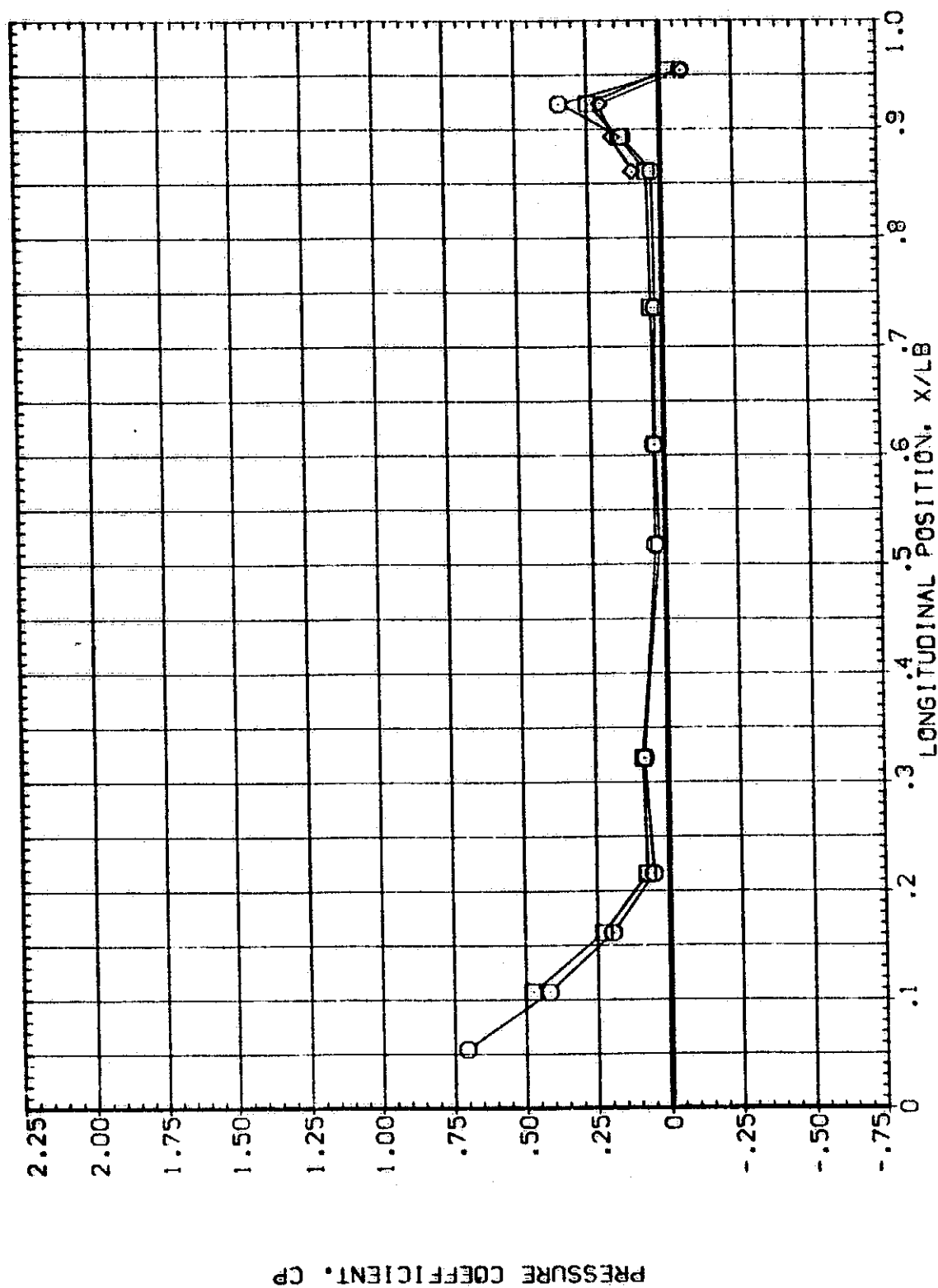


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	45.000	12.520	3.480	.000	OFFSET
□	67.500			1.000	PHI
◇	90.000				

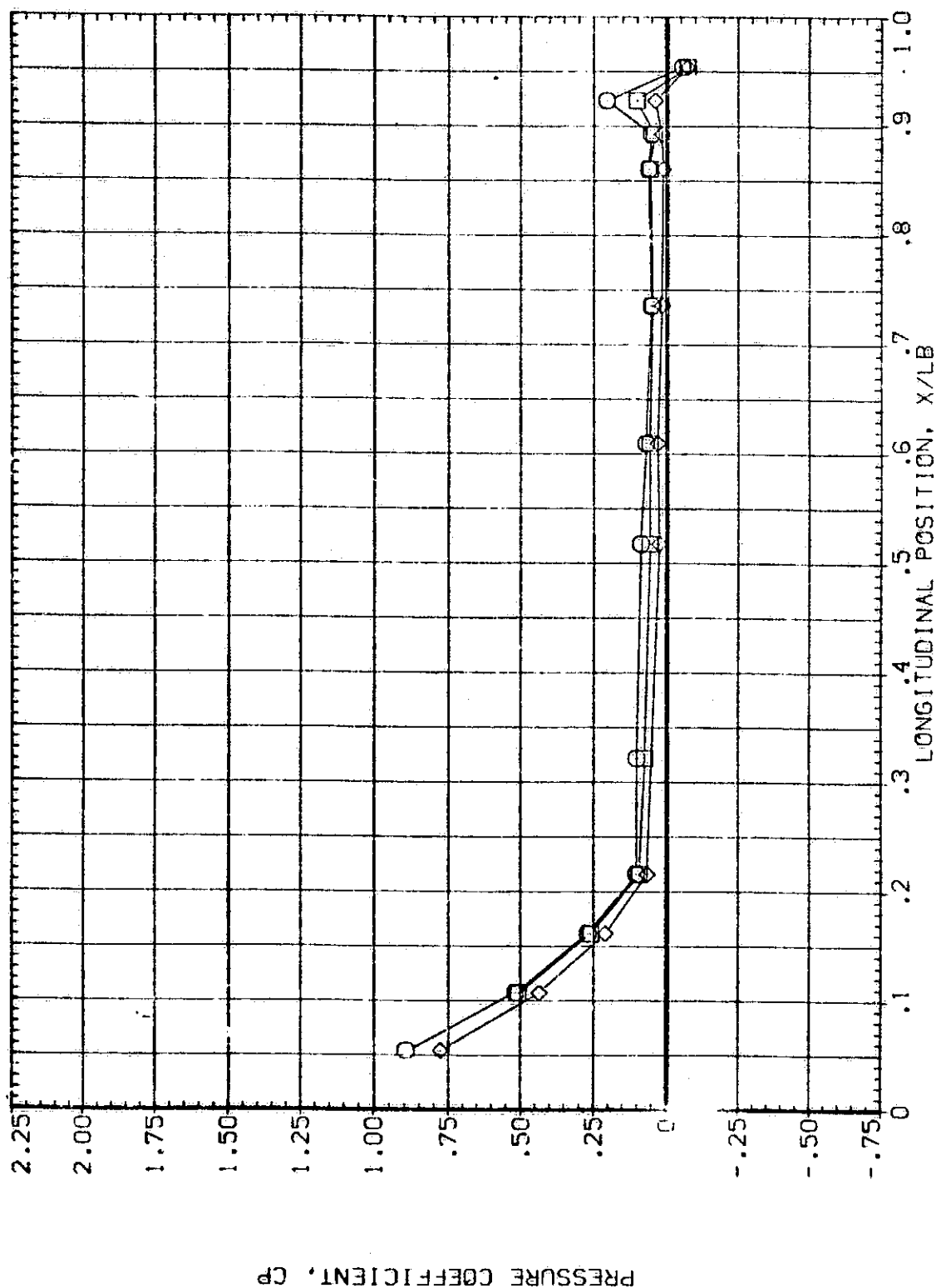


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

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MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIAD46)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	12.520	3.480	1.000	.000	20.000
□	135.000			1.000	1.000	225.000
◇	157.500					

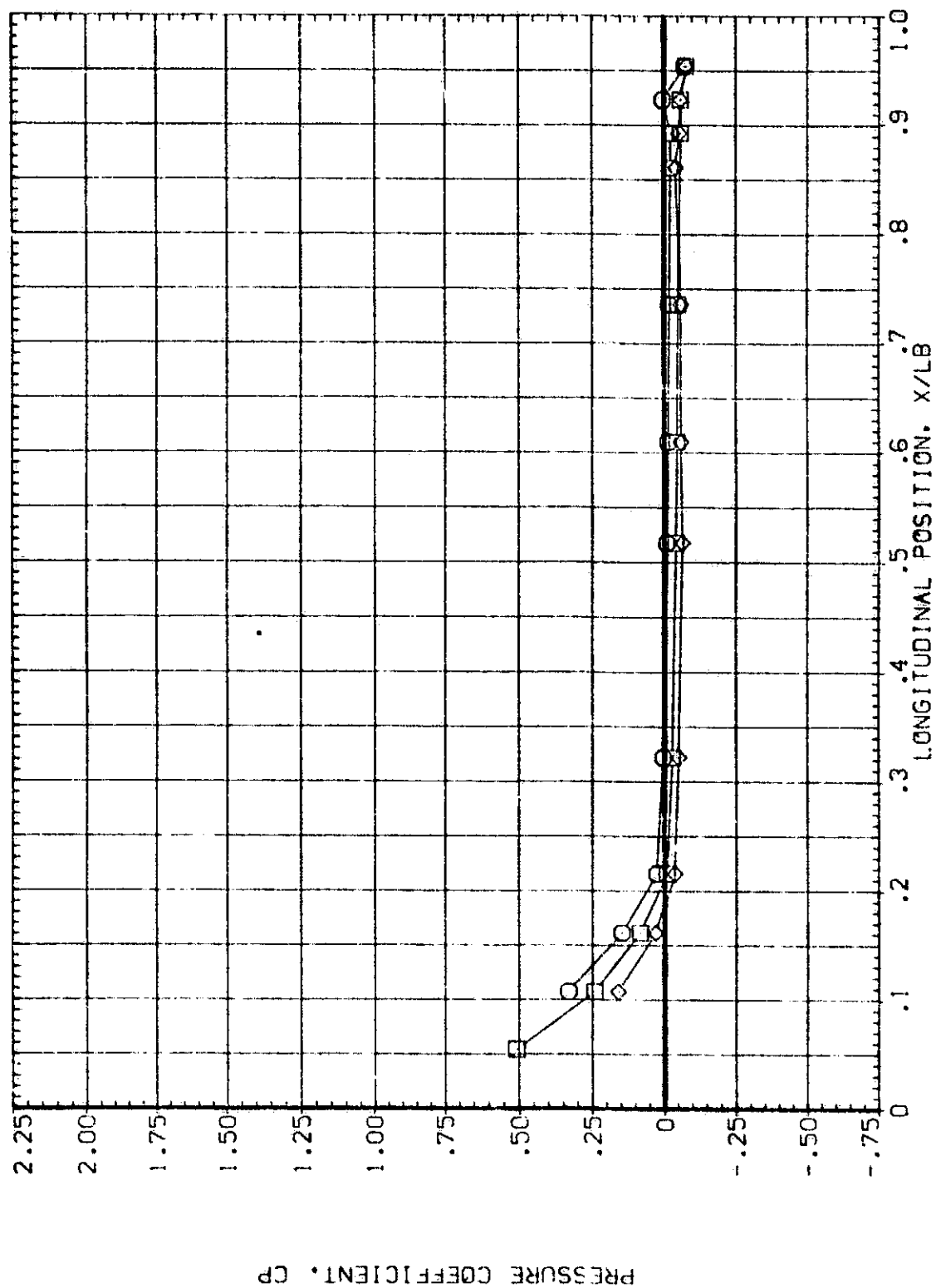


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 ○ 180.000 12.520 3.480  
 □ 202.500  
 ◇ 225.000

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI 225.000

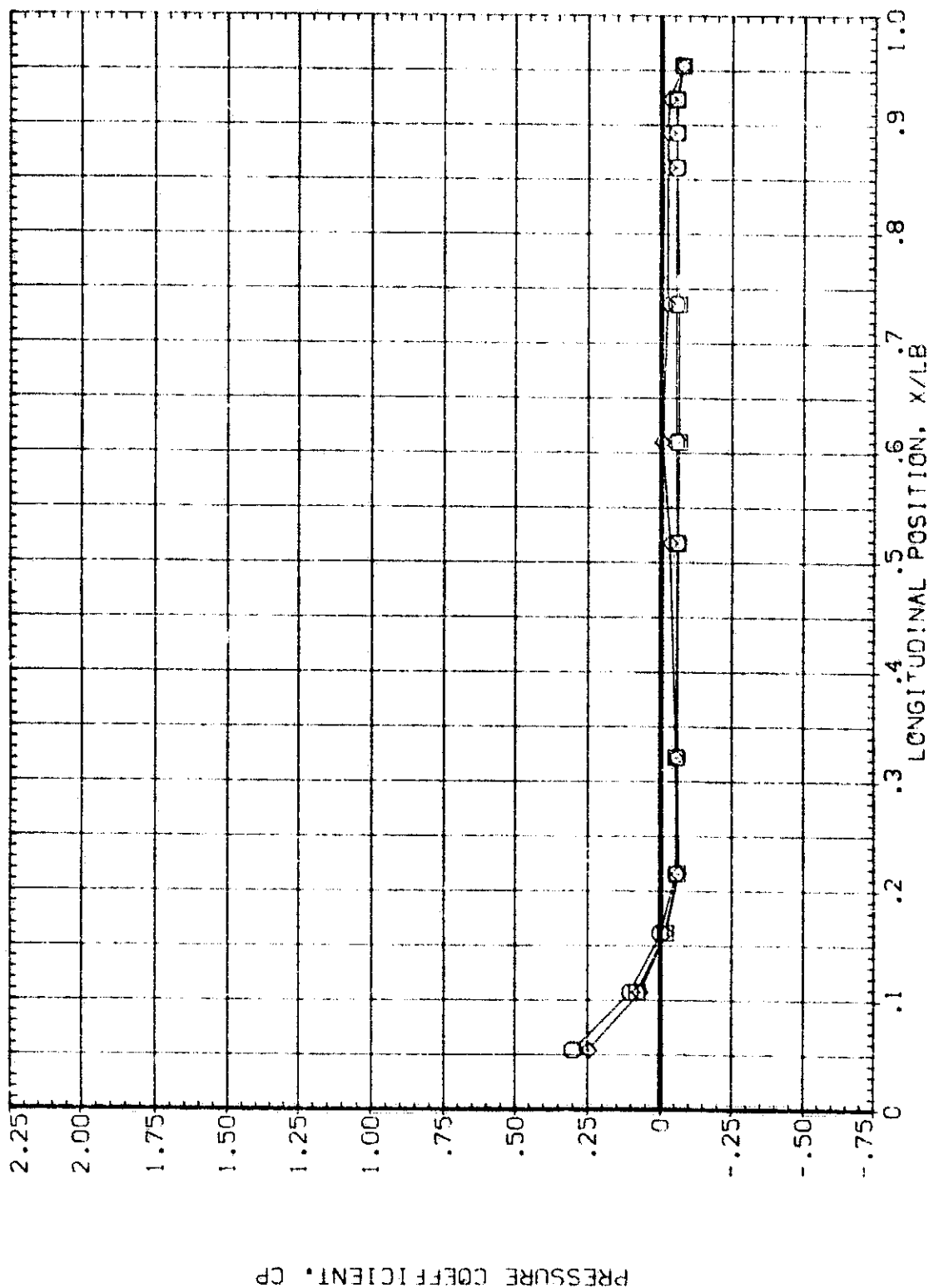


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A046)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 247.500  
 270.000  
 292.500

ALPHA  
 12.520

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 225.000

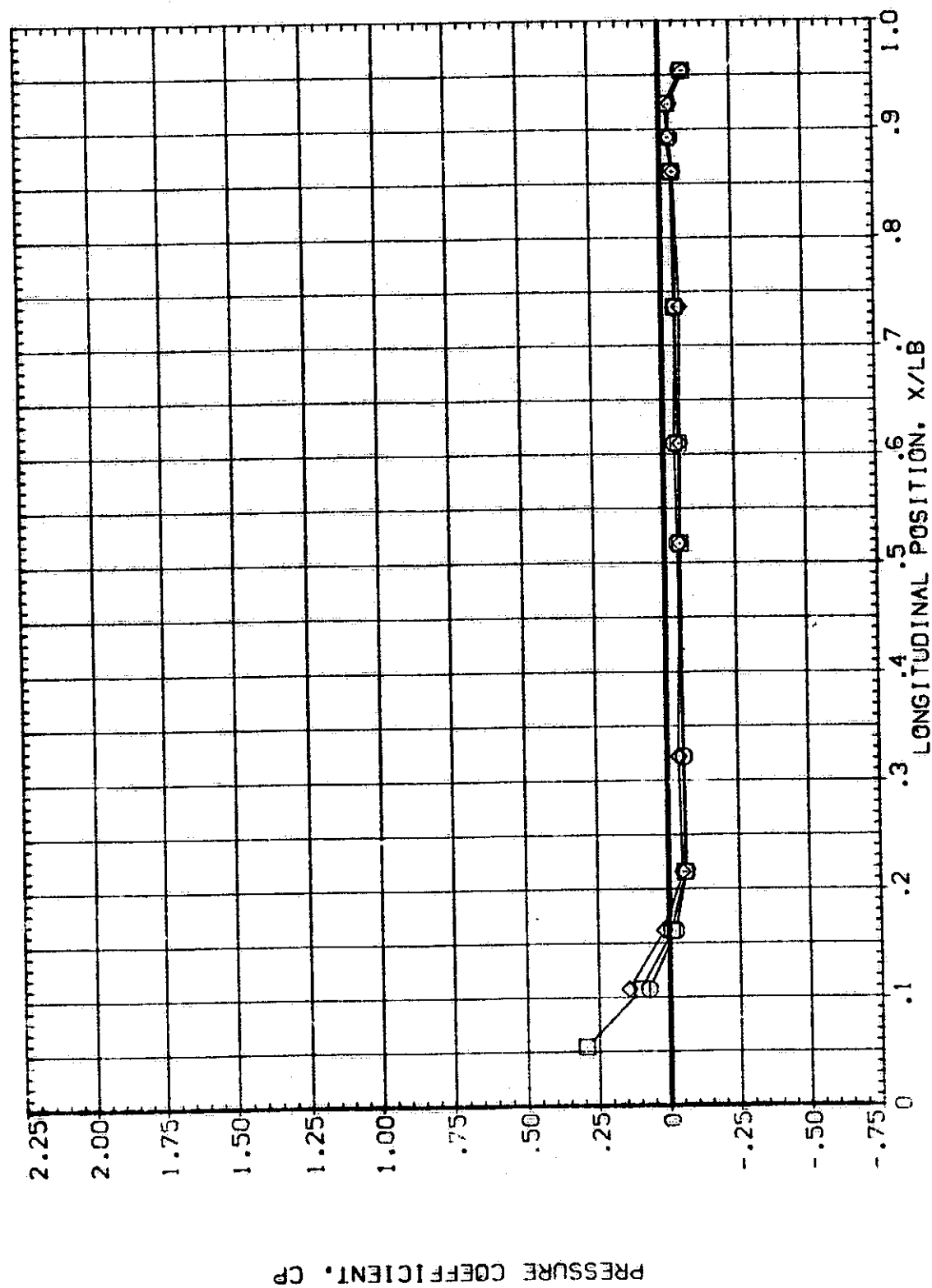


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 ○ 315.000 12.520 3.480  
 □ 326.000  
 ◇ 346.000

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 225.000  
 BETA  
 MOUNT

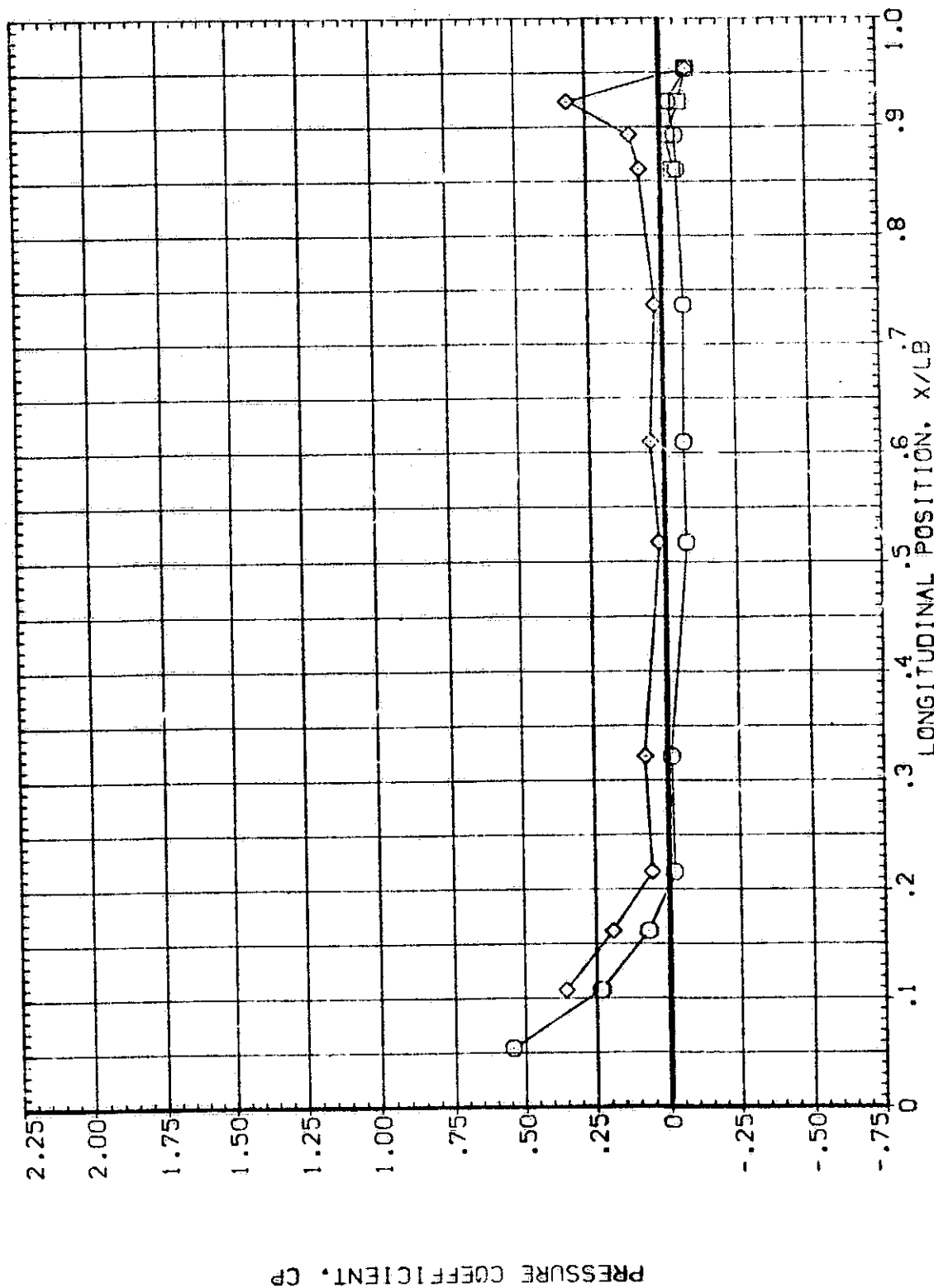


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A047)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	.000	14.000	.000	16.560	.000	3.480	BETA	.000	OFFSET	20.000
□							MOUNT	1.000	PHI	225.000
◇										

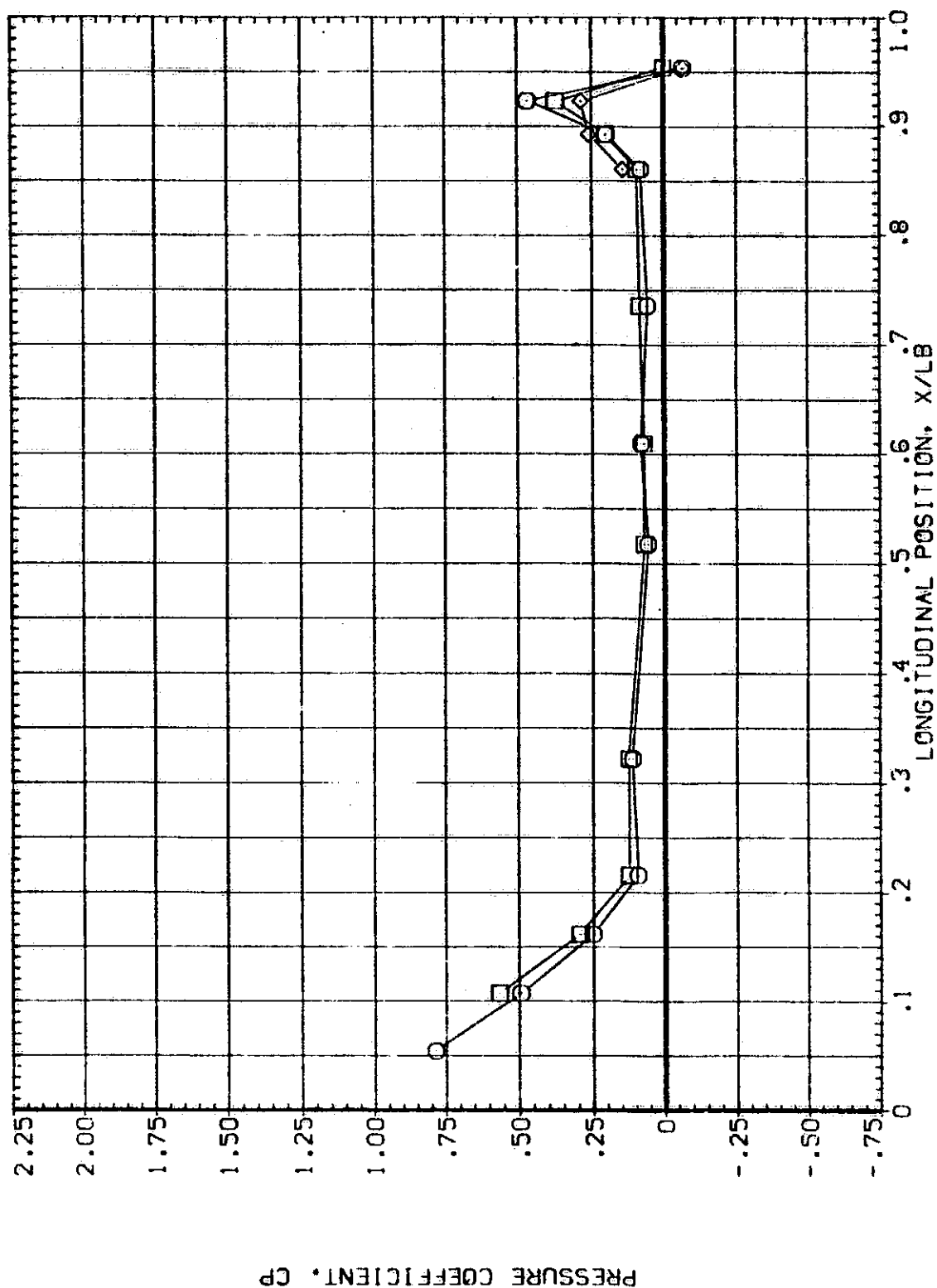


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA047)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 16.560

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 225.000  
 OFFSET  
 PHI

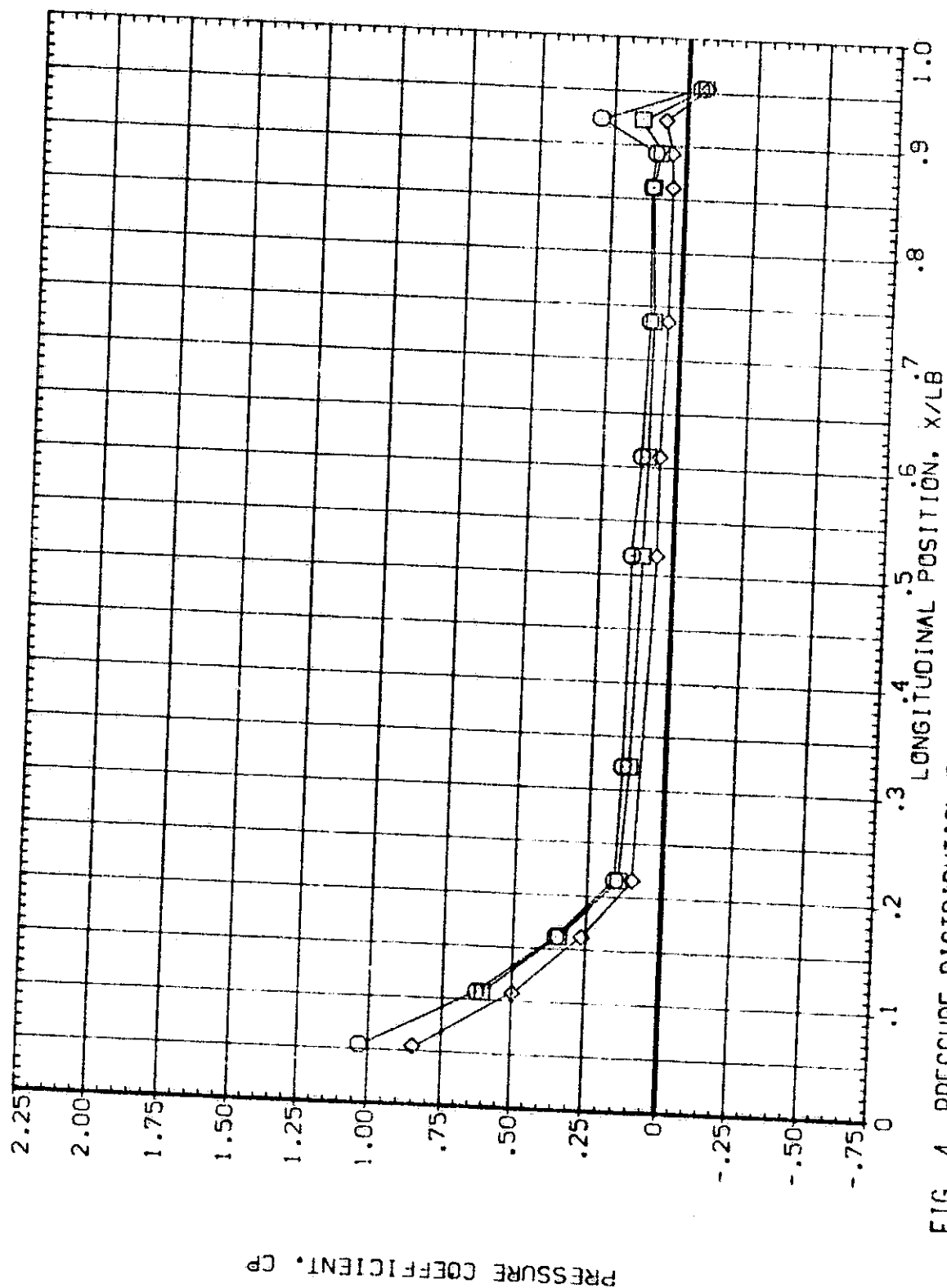


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A047)

SYMBOL  
○  
□  
◇

THETA  
112.500  
135.000  
157.500

ALPHA  
16.560

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000 OFFSET  
1.000 PHI  
20.000  
225.000

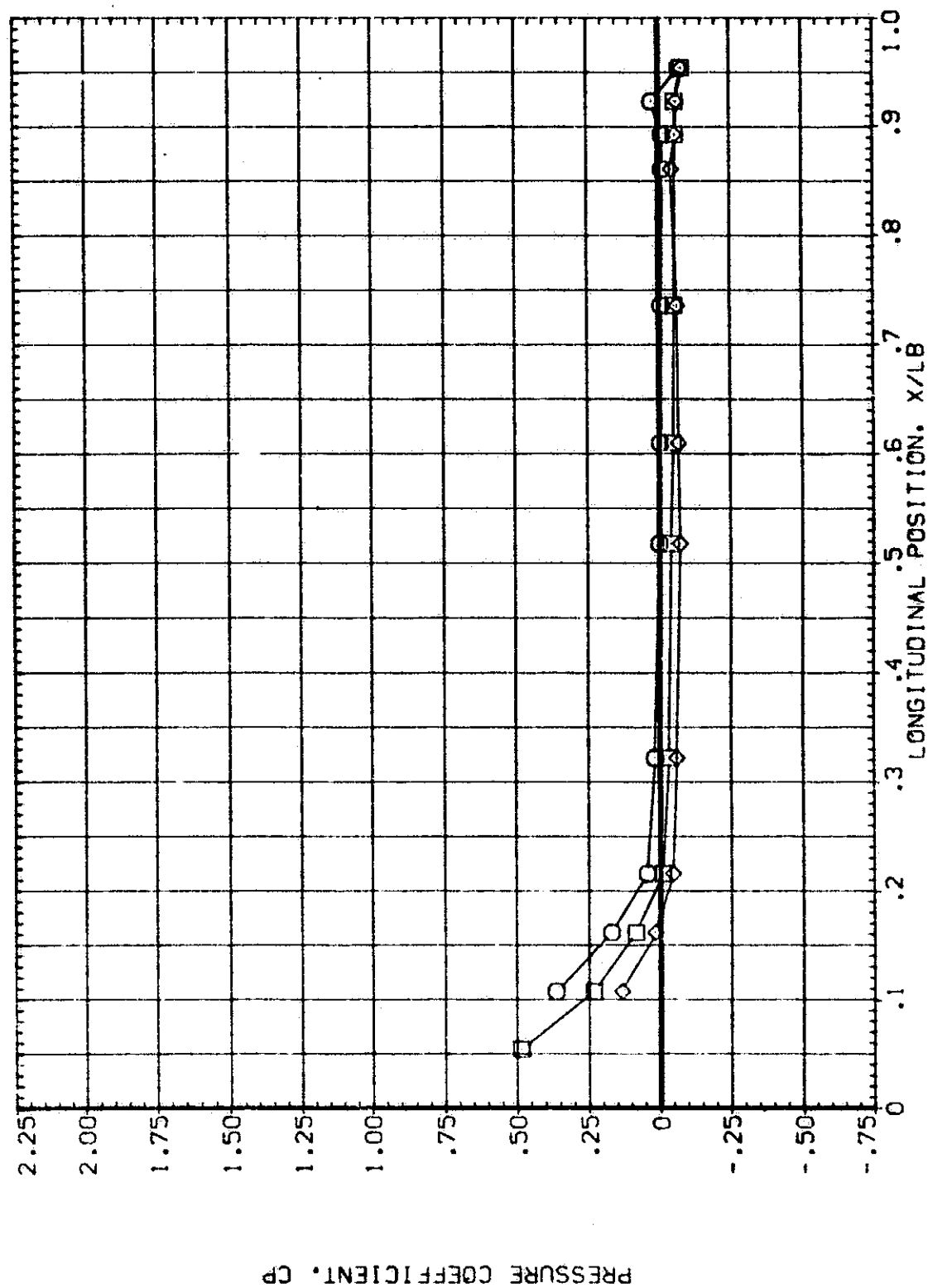


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES			
				BETA	OFFSET	PHI	
○	180.000	16.360	3.480	MOUNT	1.000	20.000	
□	202.500					225.000	
◇	225.000						

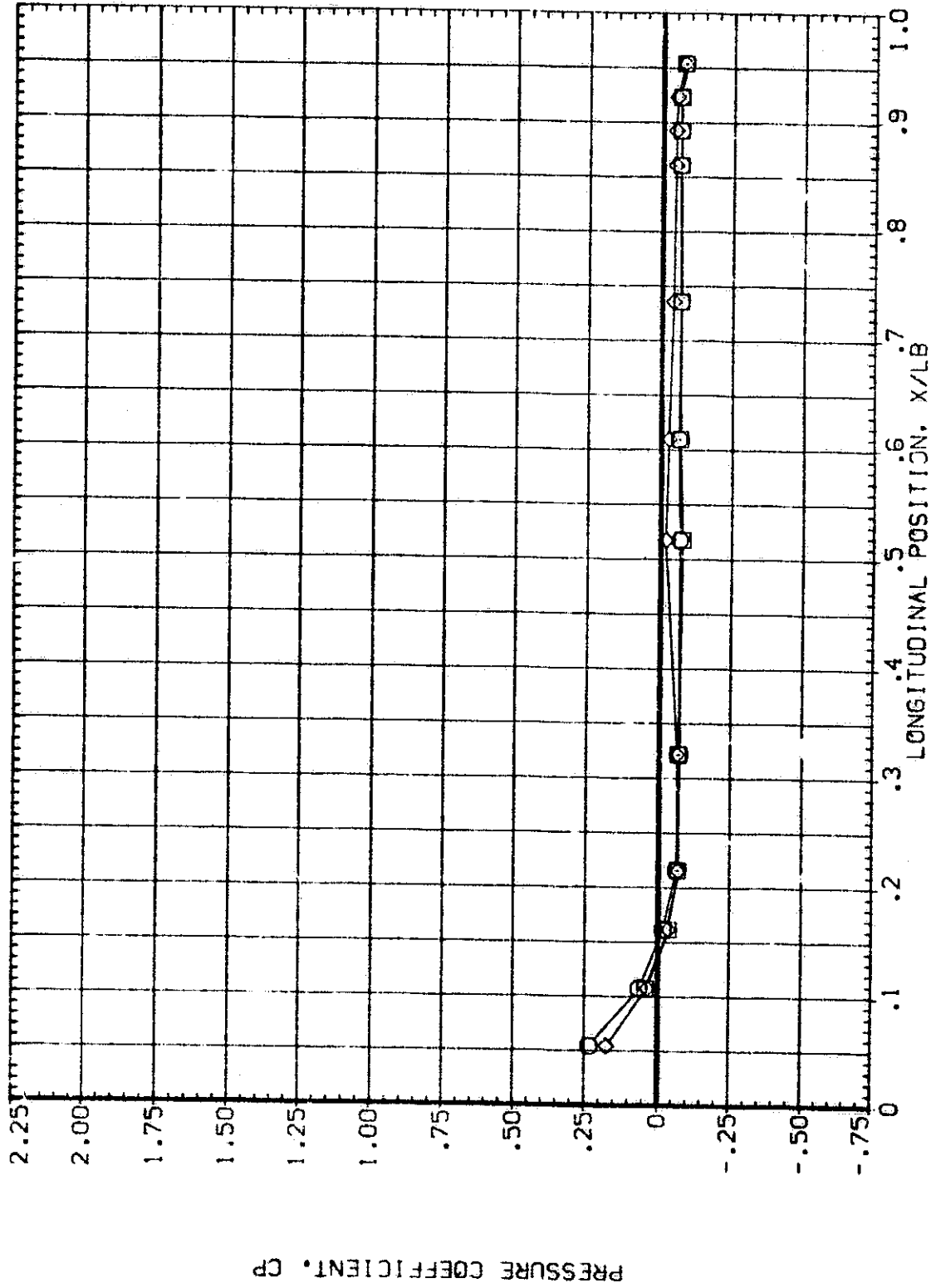


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A047)

SYMBOL THETA ALPHA MACH  
 247.500 16.560 3.480  
 270.000  
 292.500

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET 20.000  
 PHI 225.000

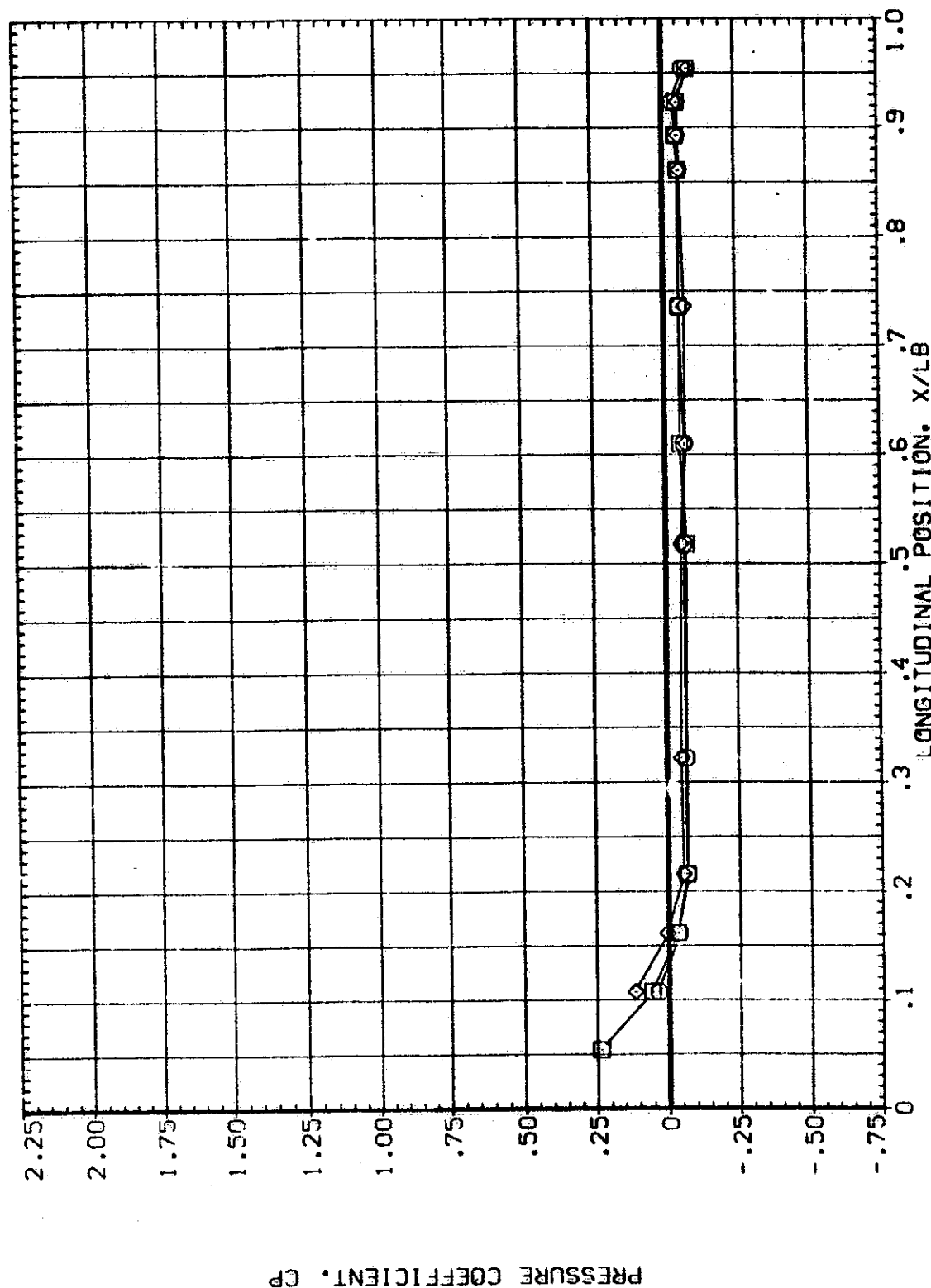


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○ □ ◇

THETA 315.000  
 ALPHA 16.560  
 MACH 3.480

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PHT 20.000  
 225.000

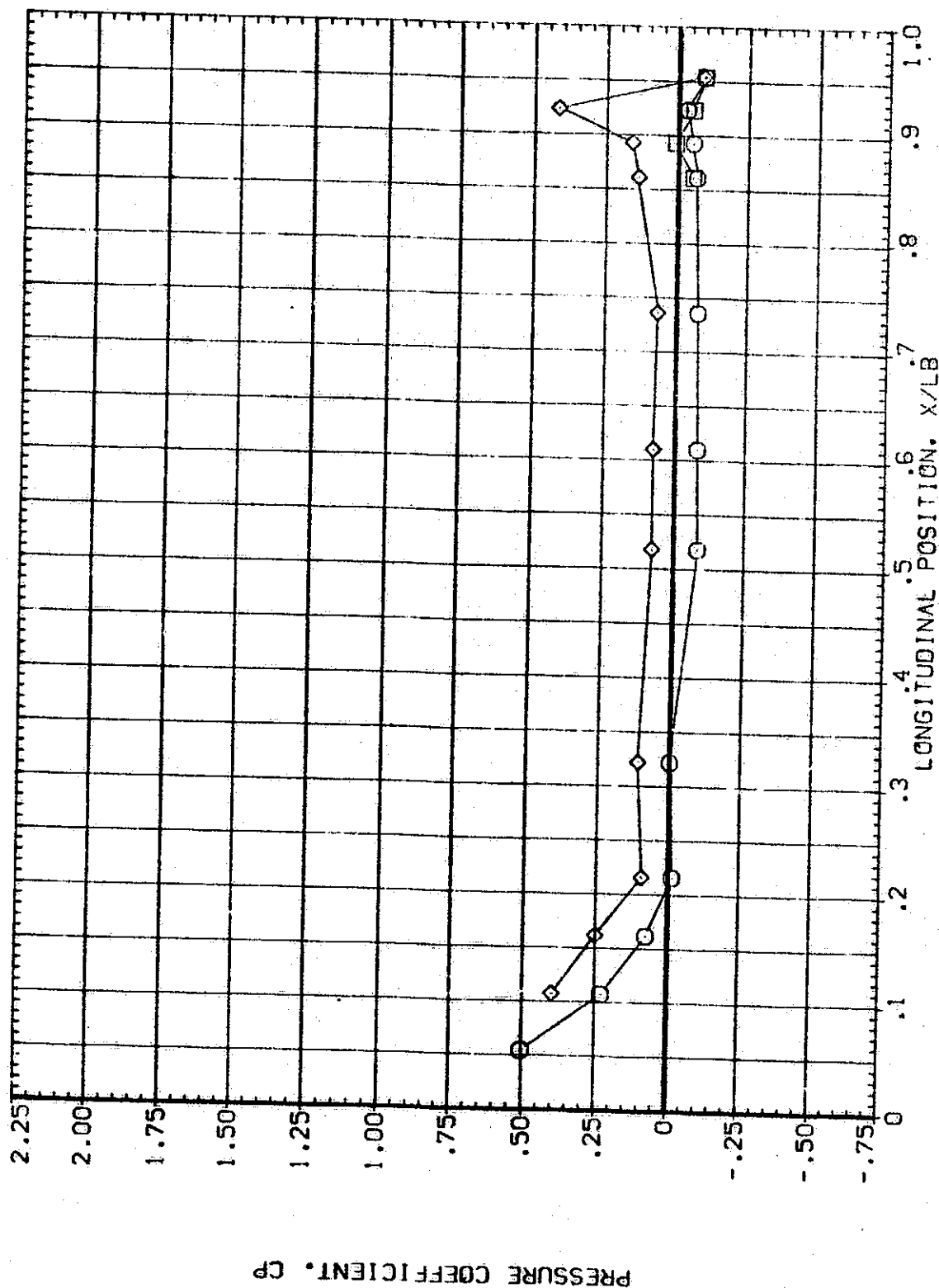


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A048)

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 225.000

BETA  
 MOUNT

THETA ALPHA MACH  
 .000 20.610 3.480  
 14.000  
 24.000

SYMBOL  
 ○  
 □  
 ◇

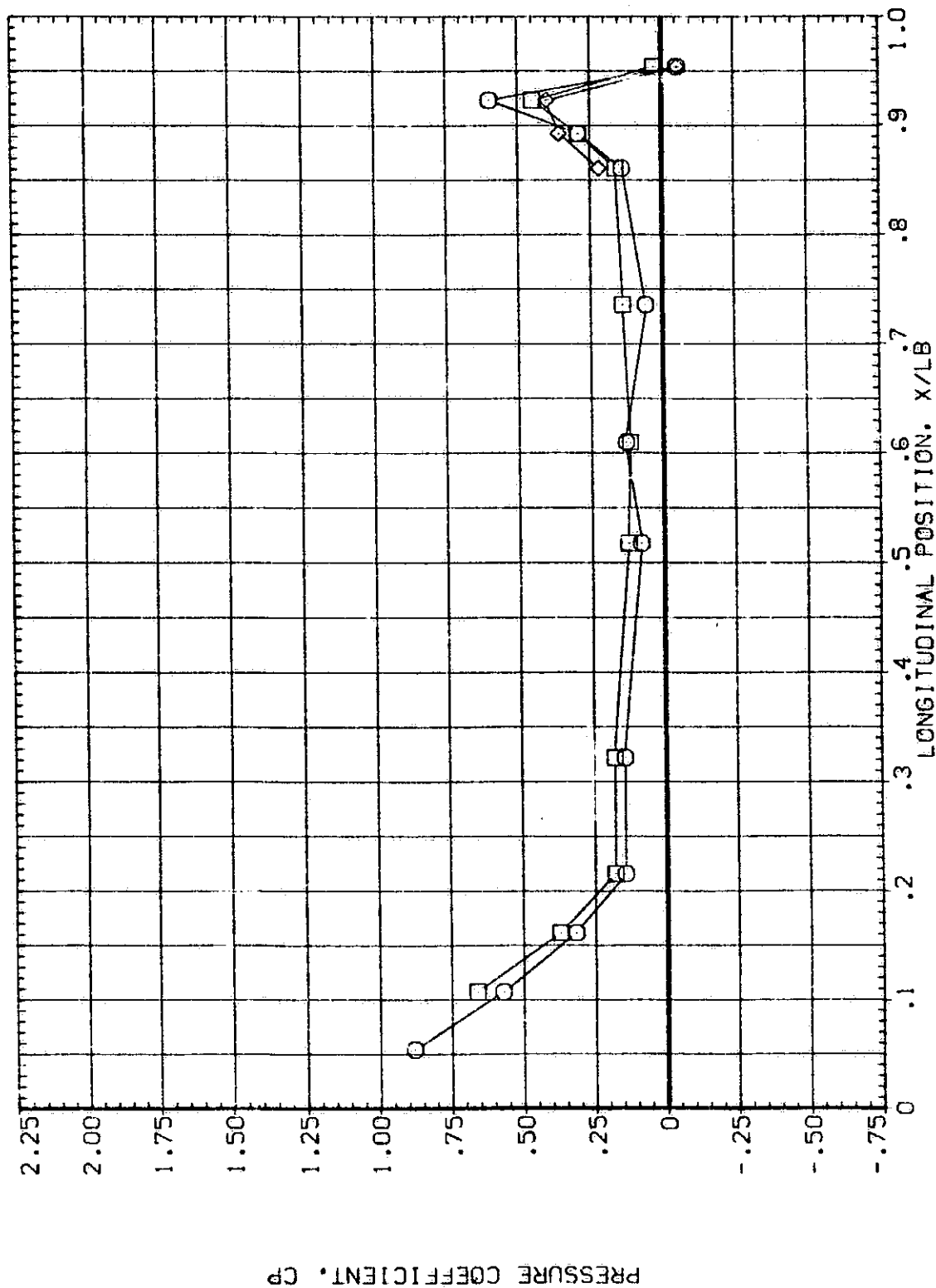


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA048)

SYMBOL  
○ □ ◇

THETA 45.000  
67.500  
90.000

ALPHA 20.610

MACH 3.480

PARAMETRIC VALUES  
BETA .000  
MOUNT 1.000  
OFFSET 20.000  
PHI 275.000

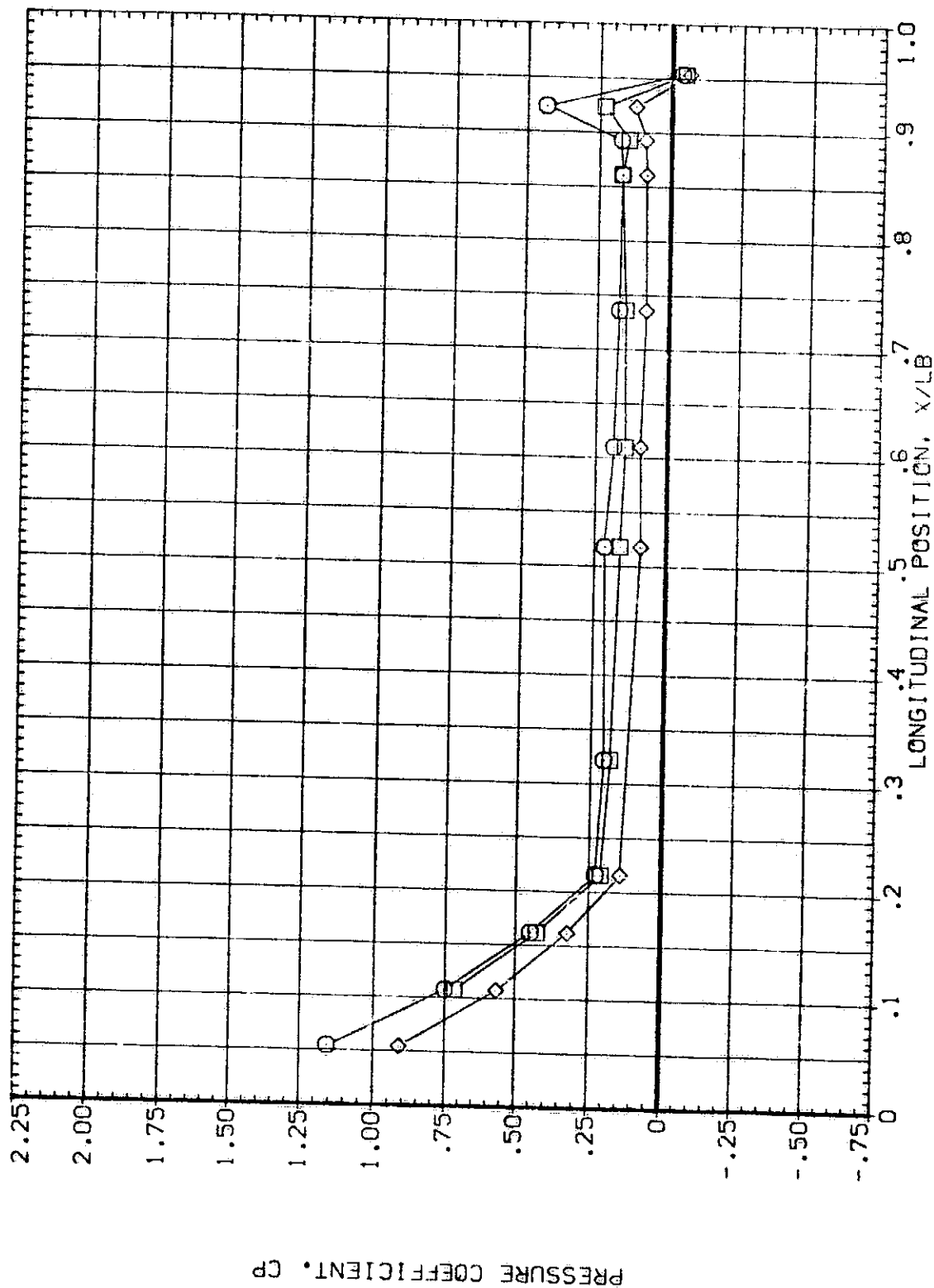


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A048)

SYMBOL THETA ALPHA MACH  
 O 112.500 20.610 3.480  
 □ 135.000  
 ◇ 157.500

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 225.000

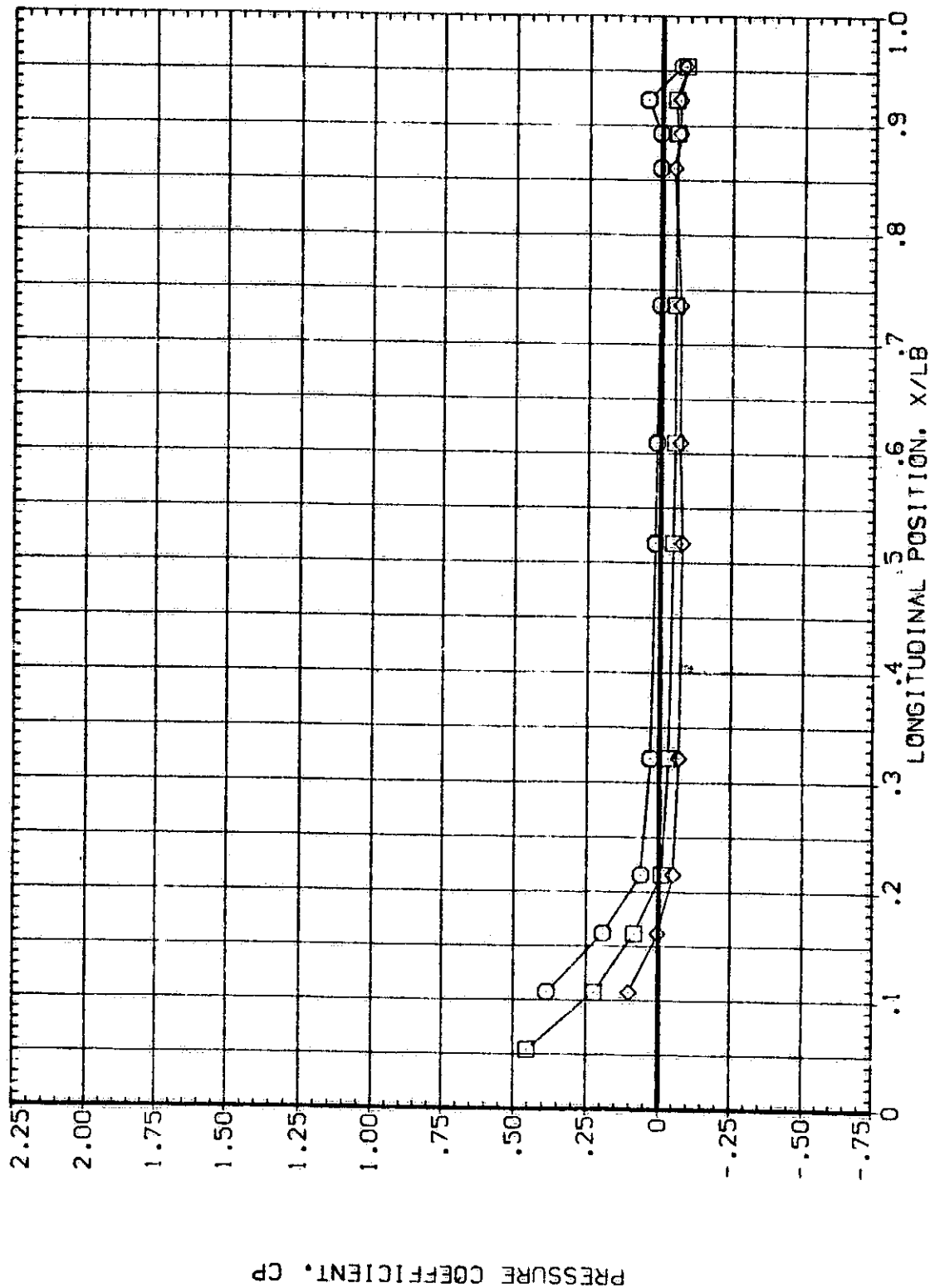


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

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MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A048)

SYMBOL

THETA  
180.000  
202.500  
225.000

ALPHA  
20.610

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
20.000  
225.000

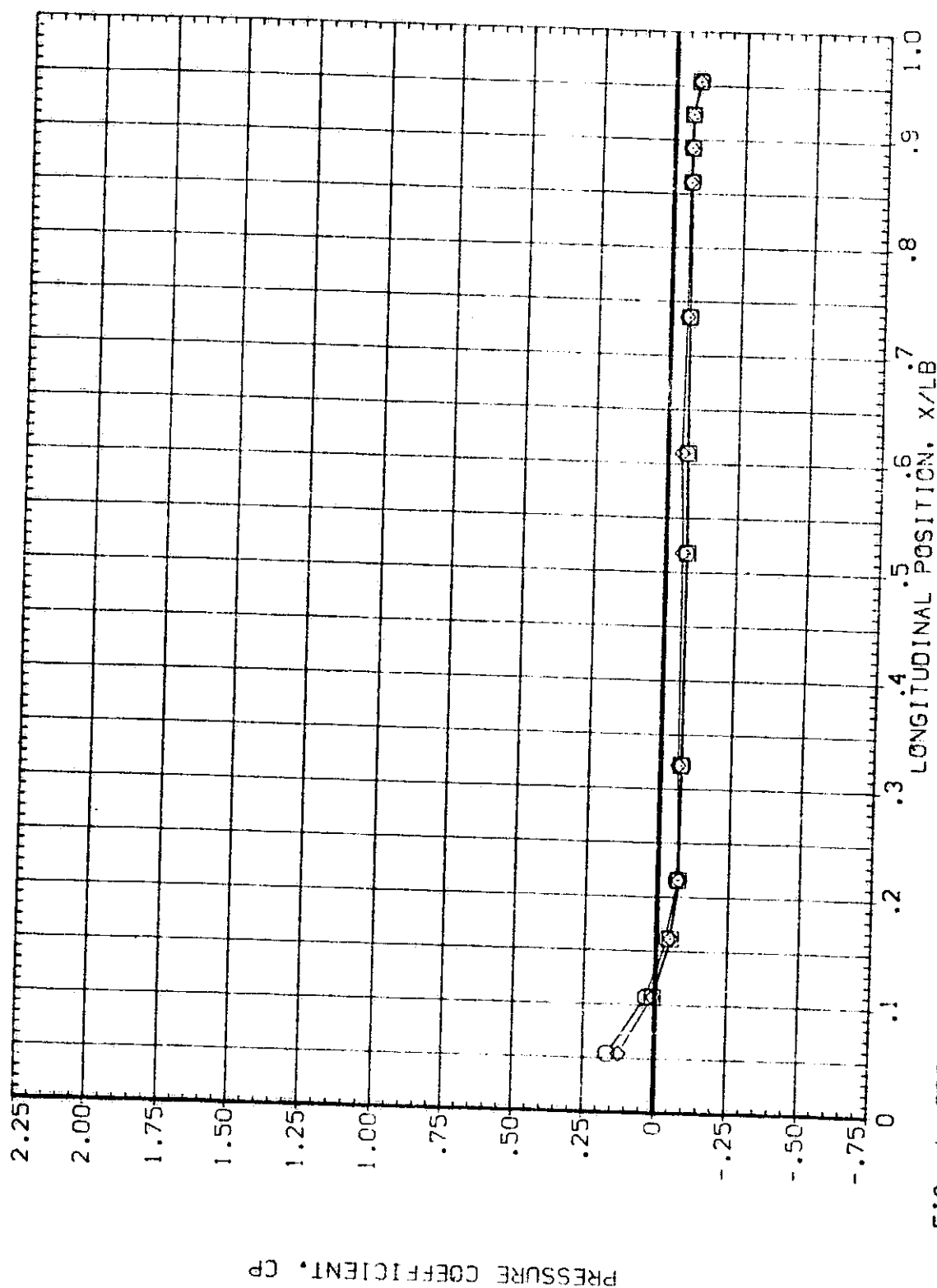


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A048)

SYMBOL  
247.500  
270.000  
292.500

ALPHA  
20.610

MACH  
3.480

PARAMETRIC VALUES  
.000  
1.000

BETA  
MOUNT

20.000  
225.000

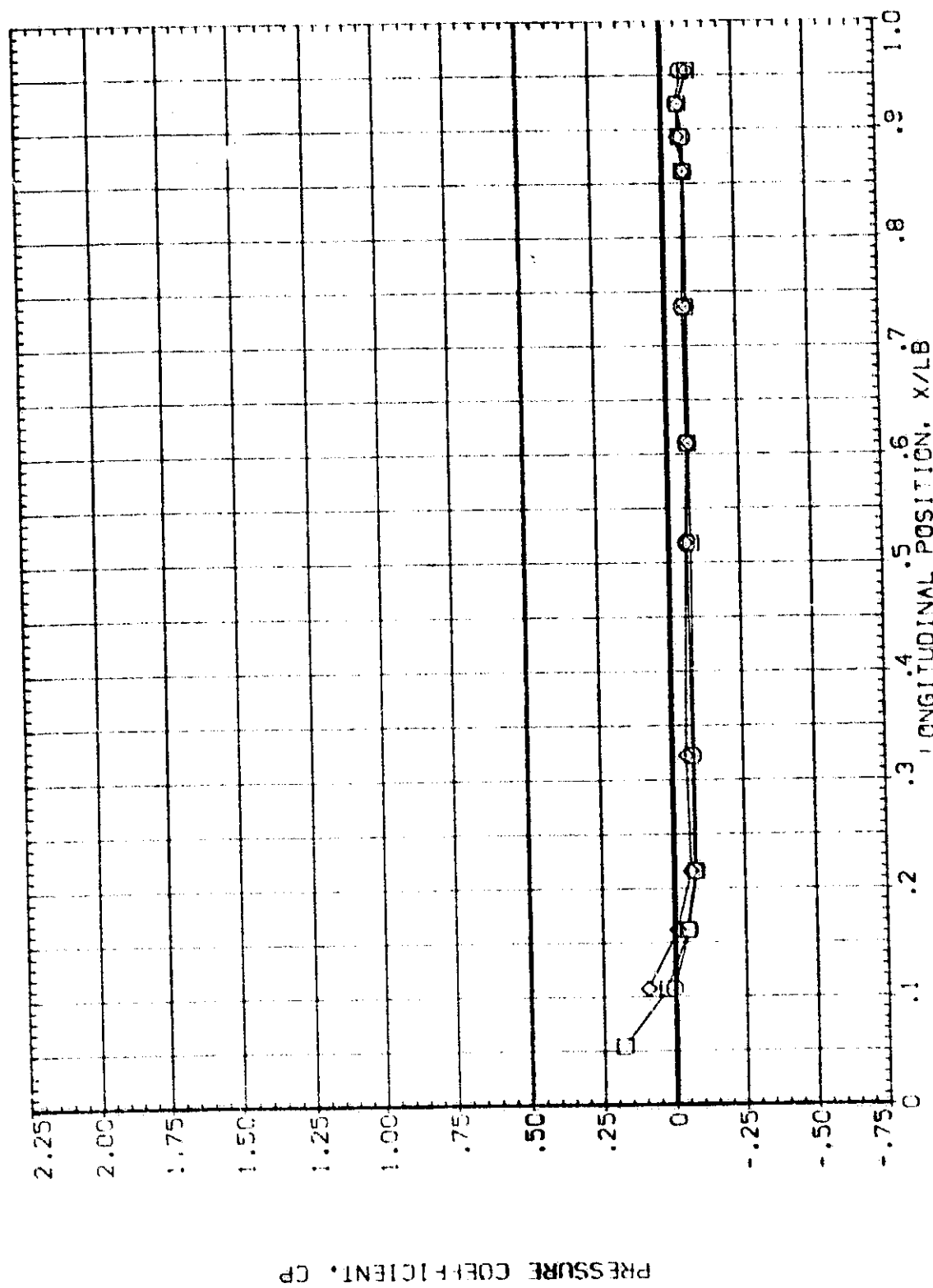


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
◇	315.000	20.610	3.480	MDUNT	.000 OFFSET 20.000
○	326.000				1.000 PHI 225.000
◇	346.000				

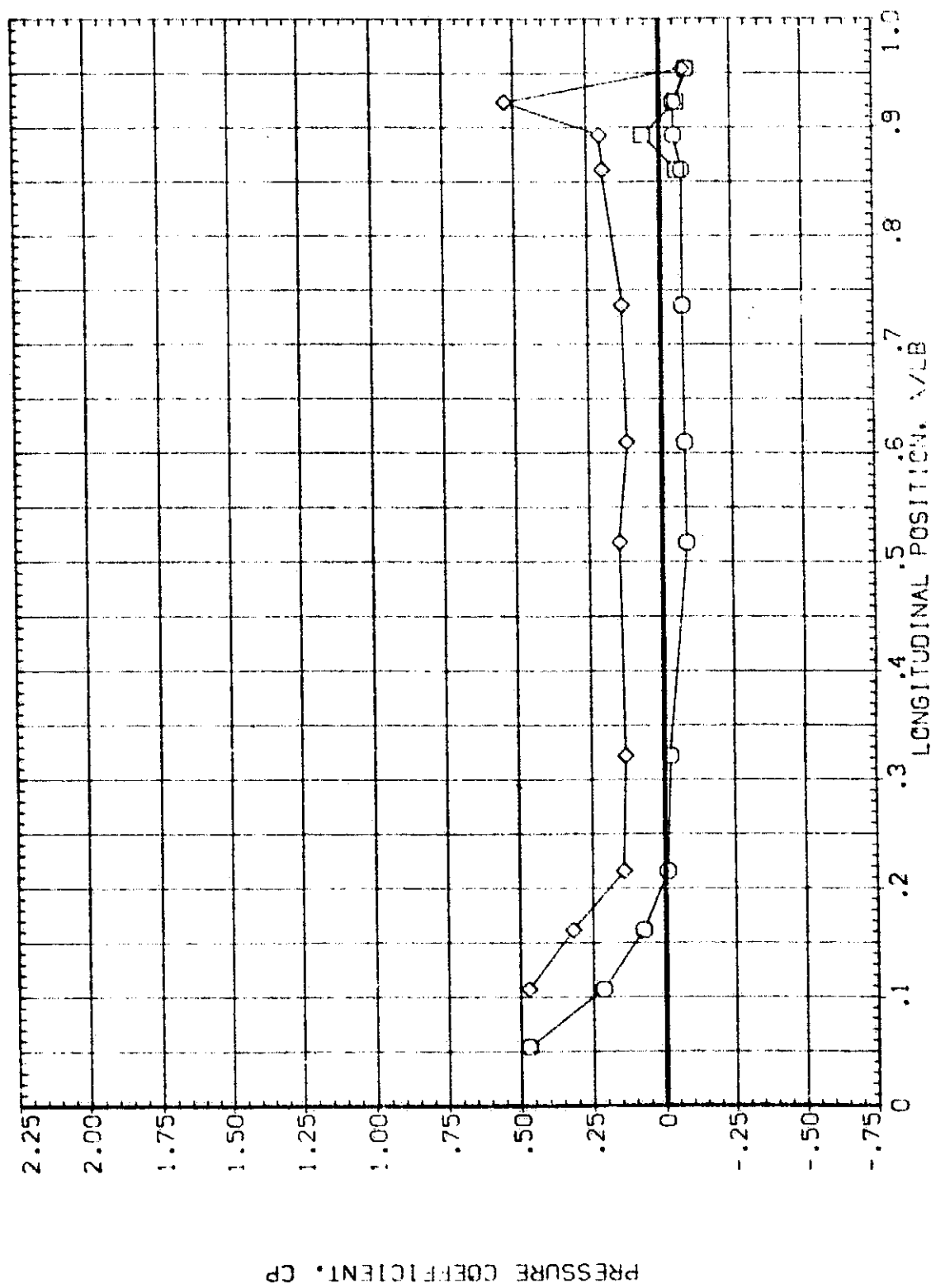


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA049)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20.000
○	.000	24.650	3.480	1.000	PHI	225.000
□	14.000					
◇	24.000					

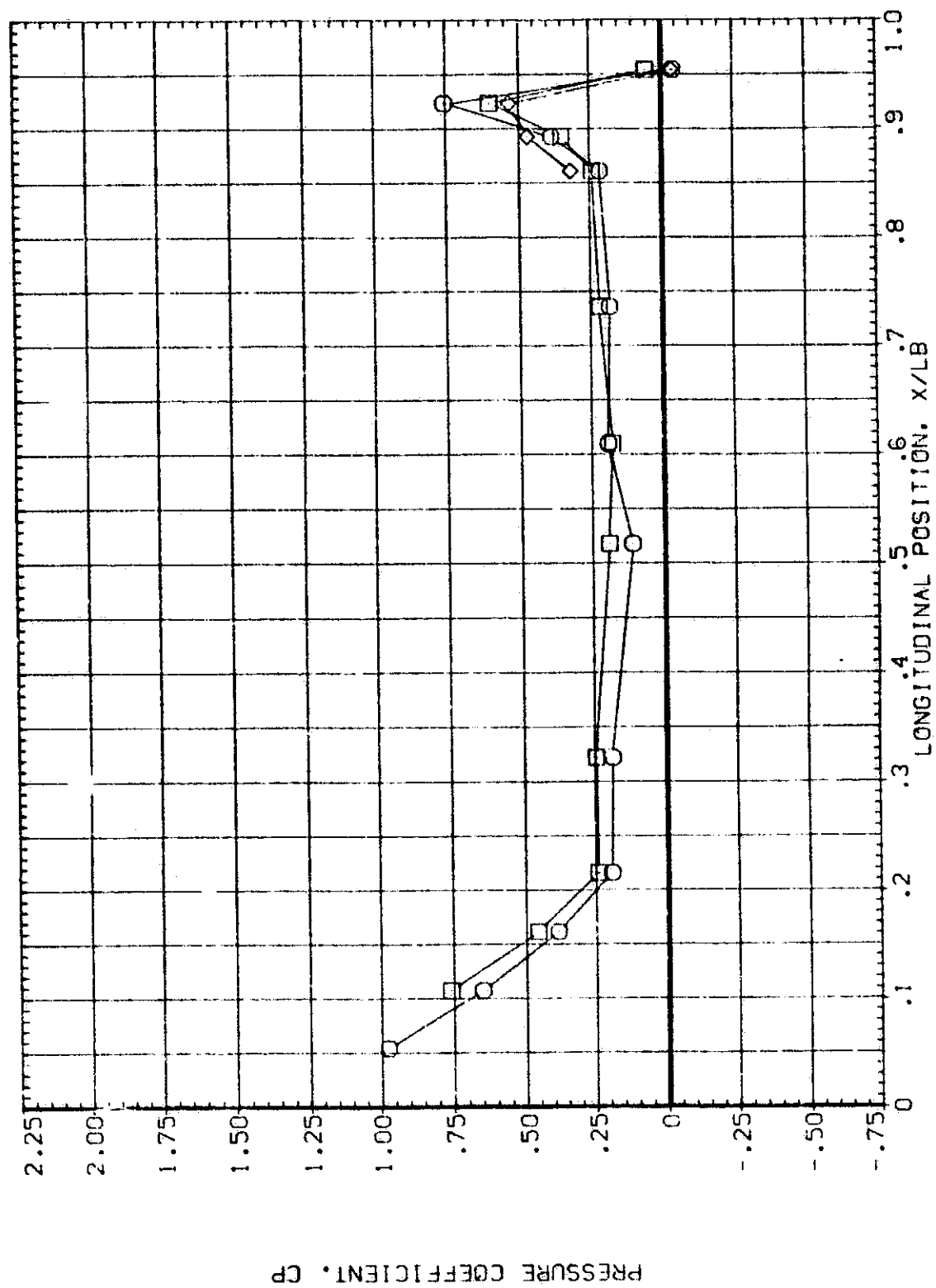


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL

THETA  
45.000  
67.500  
90.000

ALPHA  
24.660

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000 OFFSET  
1.000 PH1

20.000  
225.000

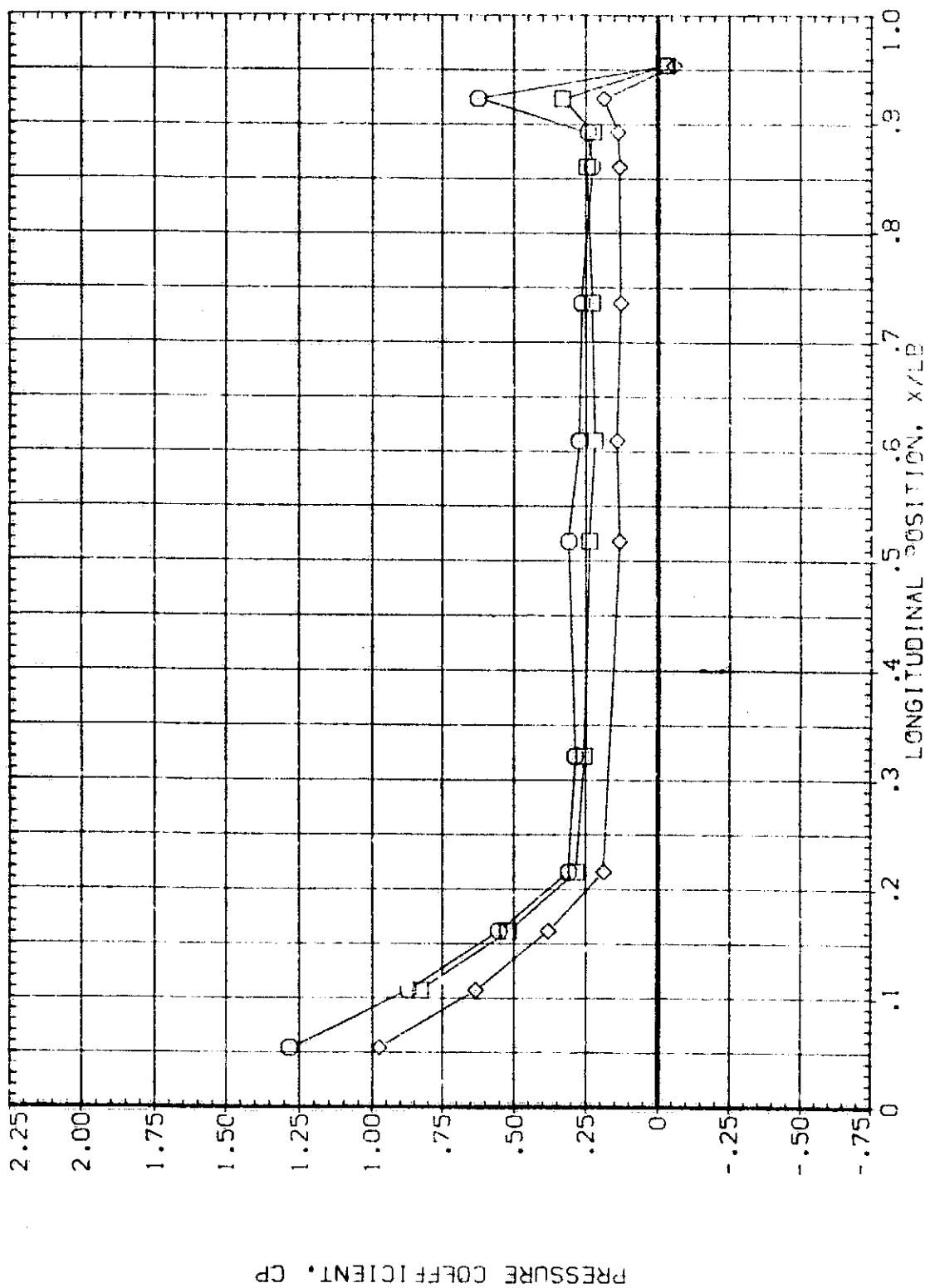


FIG. 4 PRESSURE DISTRIBUTION OVER ET - 11 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A049)

SYMBOL  
◇ □ ○

THETA  
112.500  
135.000  
157.500

ALPHA  
24.660

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000 OFFSET  
1.000 PHI

20.000  
225.000

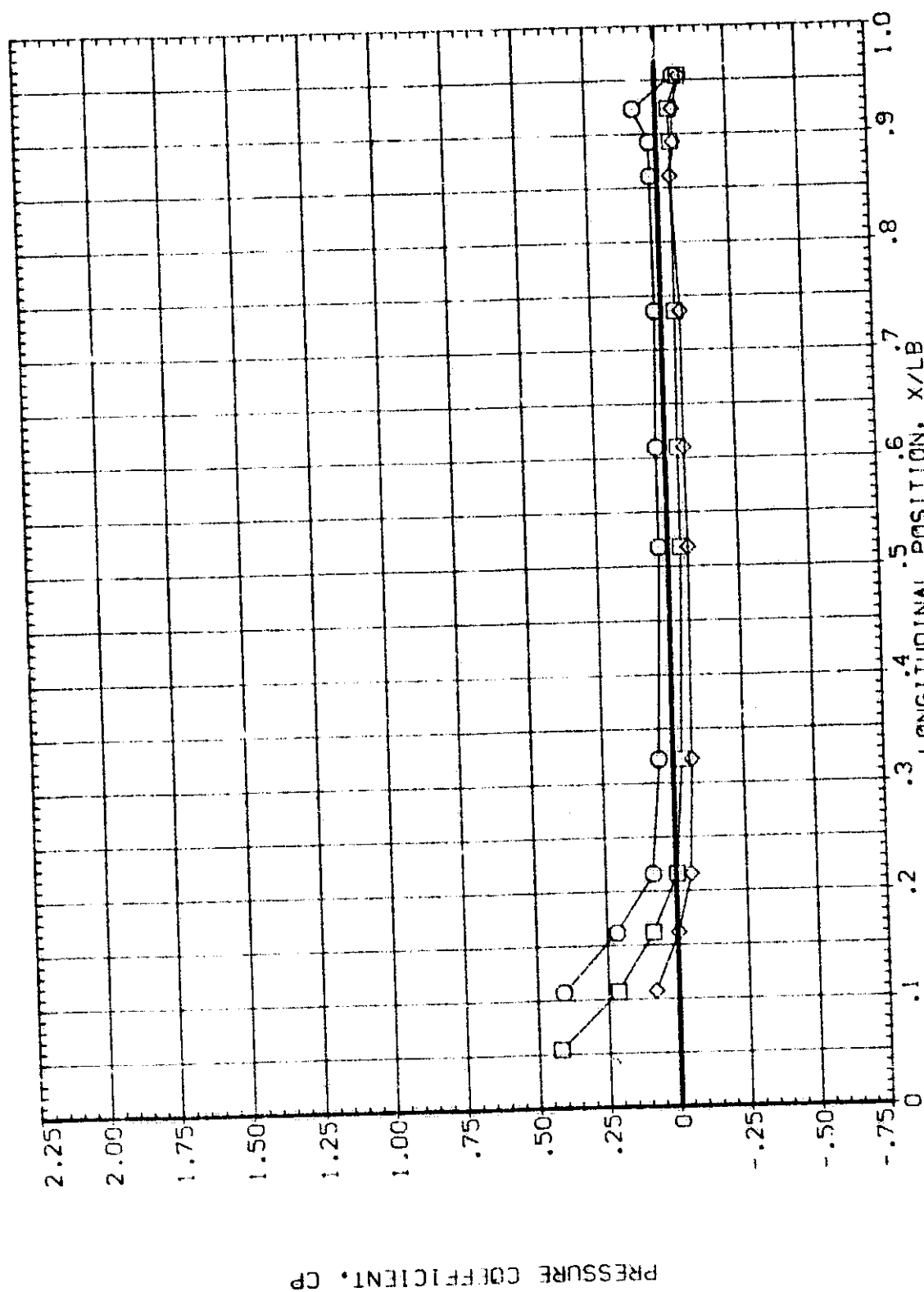


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 180.000 24.660 3.480  
 202.500  
 225.000

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI 225.000

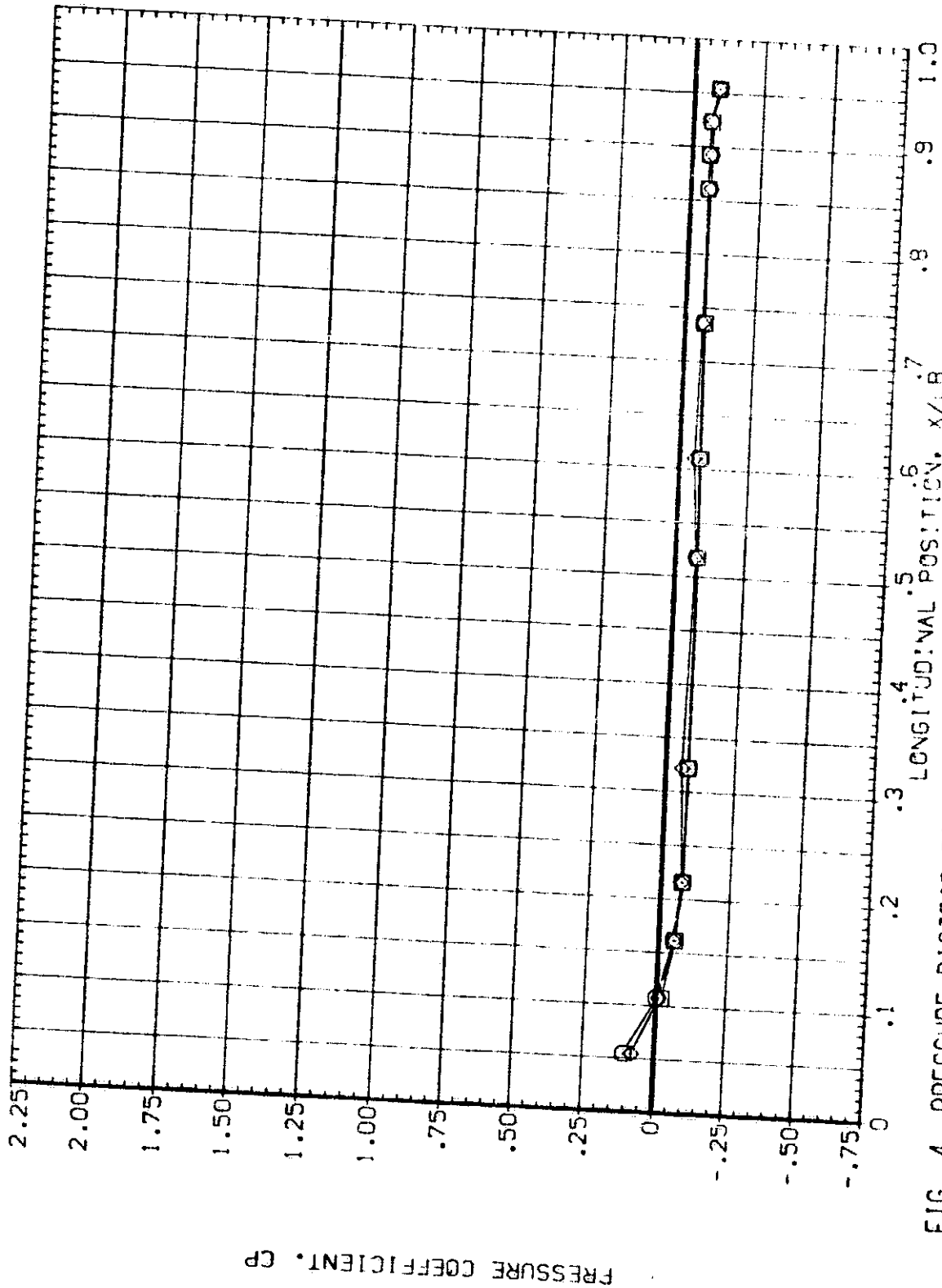


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUSIONS

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA049)

SYMBOL	PARAMETRIC VALUES	
	BETA	PHI
◇	247.500	20.000
□	270.000	225.000
◇	292.500	

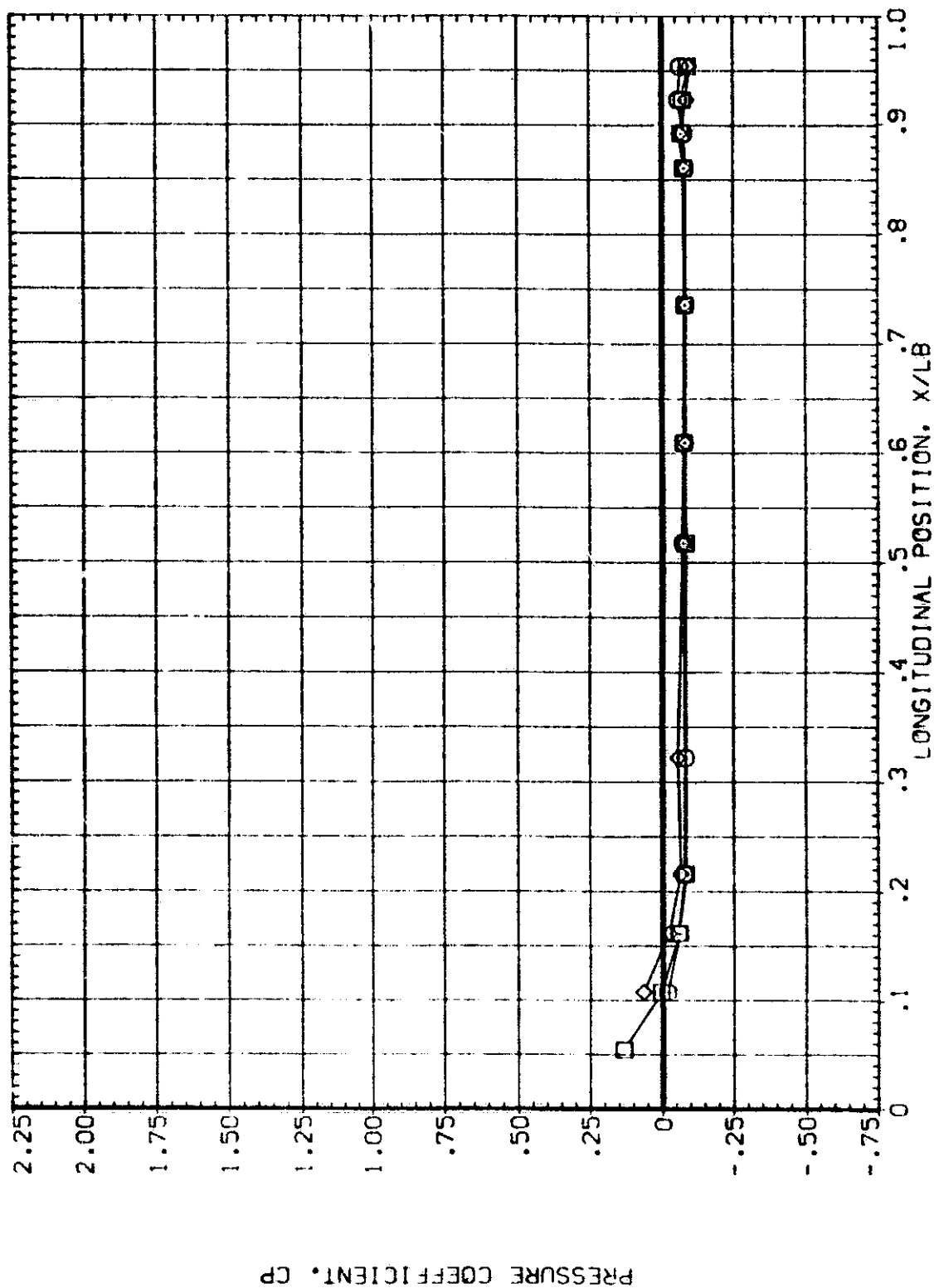


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



(P1A049)

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1

SYMBOL    THETA    ALPHA    MACH  
○    315.000    24.660    3.480  
□    326.000  
◇    346.000

PARAMETRIC VALUES  
BETA    .000    OFFSET    20.000  
MOUNT    1.000    PHI    225.000

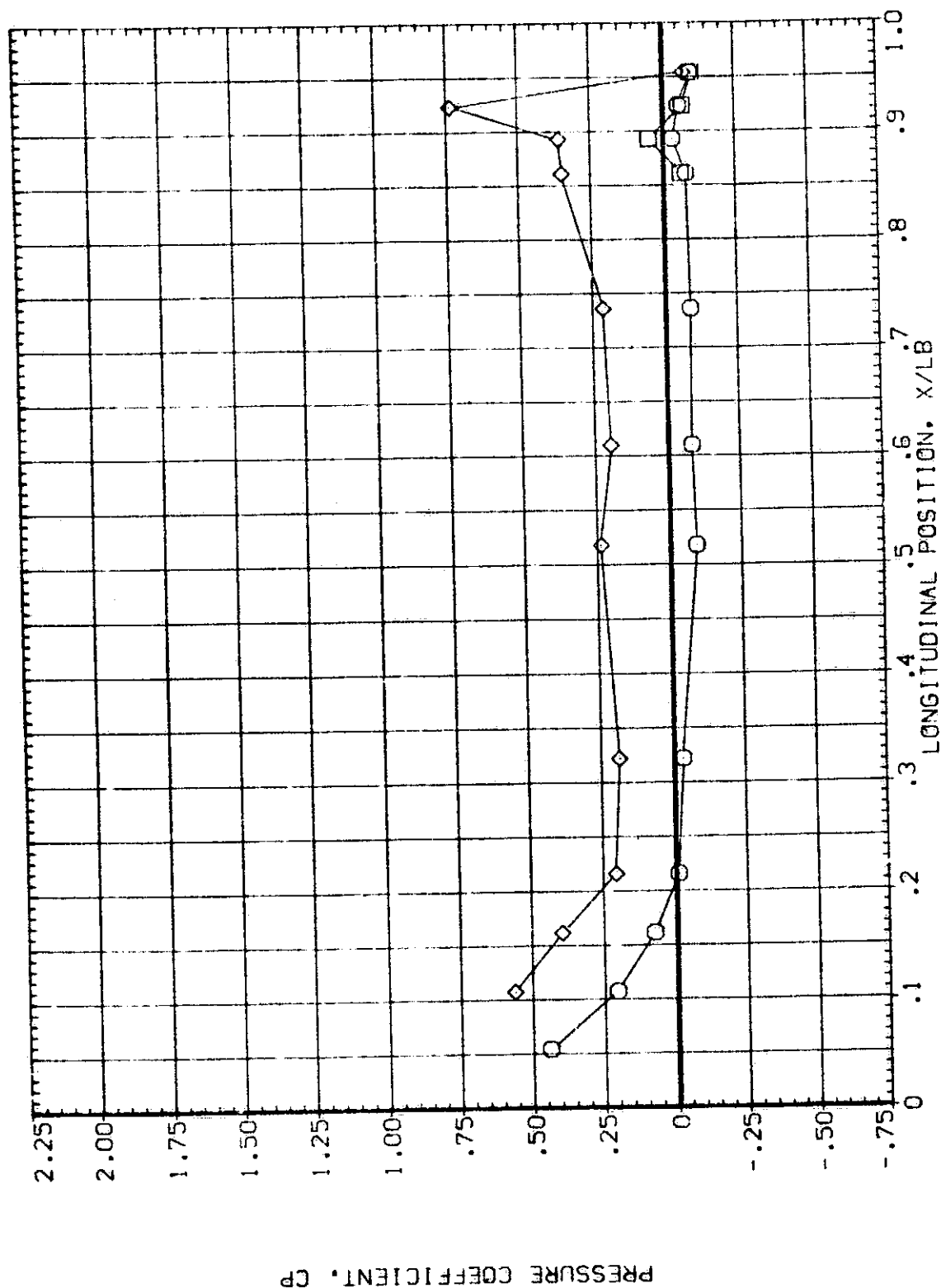


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

(P1A050)

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

PARAMETRIC VALUES  
BETA .000  
HOUNT 1.000  
PHI 20.000  
225.000

ALPHA 28.720  
MACH 3.480

THETA .000  
14.000  
24.000

SYMBOL  
○  
□  
◇

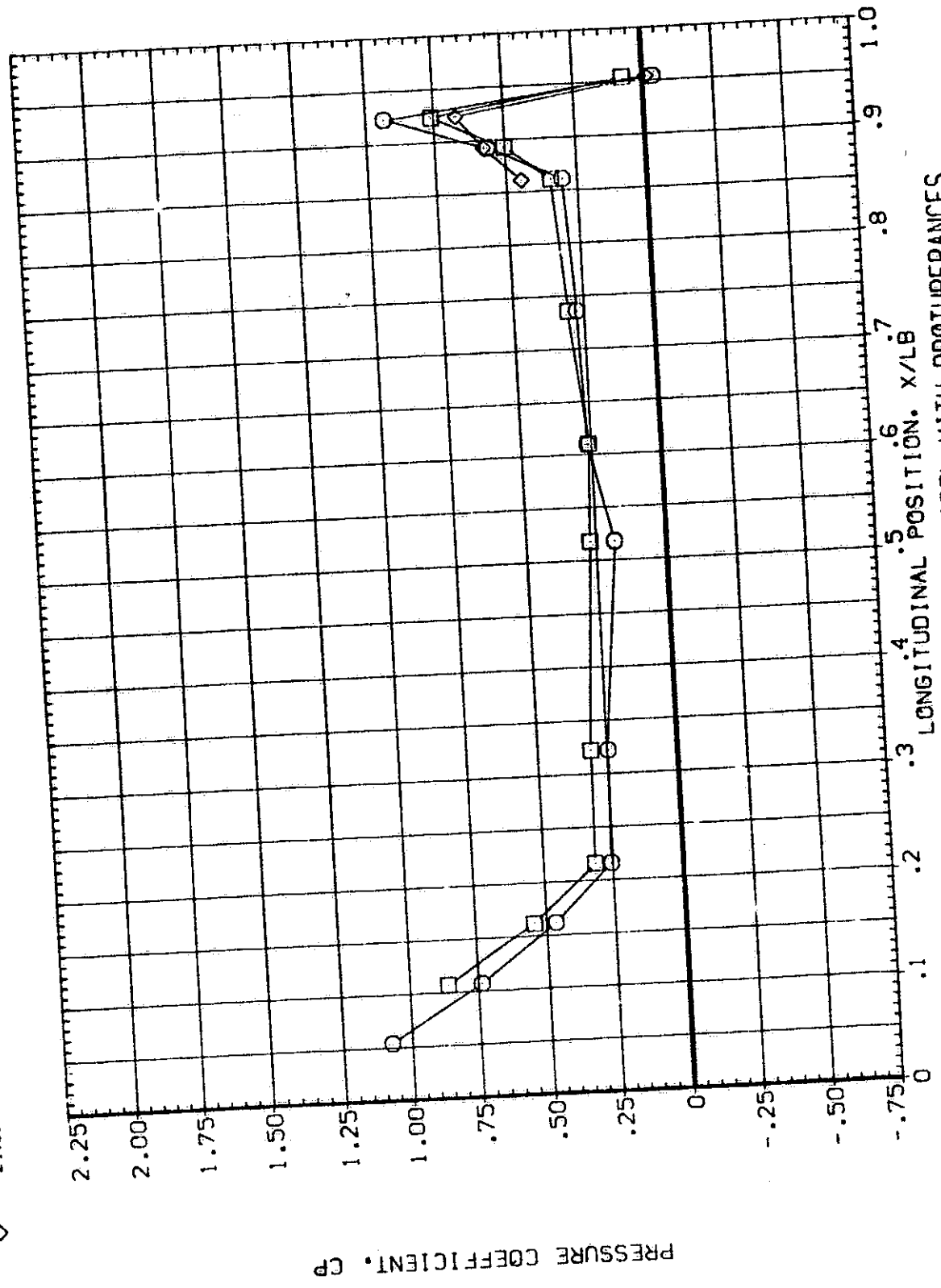


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	DESCRIPTION
	1.00
	1.00
	1.00

THETA	ALPHA	MACH
45.000	28.720	3.480
67.500		
90.000		

PARAMETRIC VALUES

20.000  
225.000

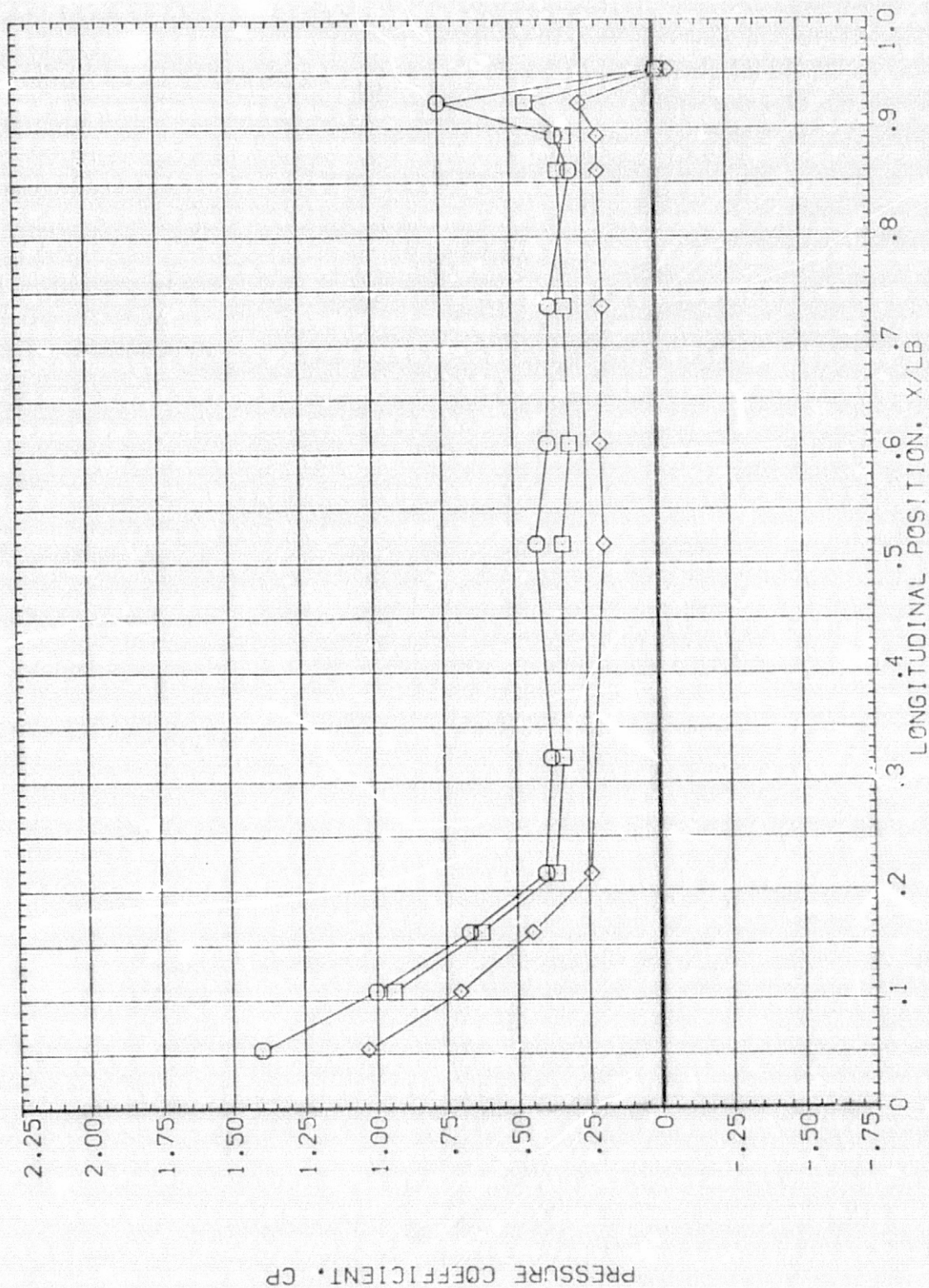


FIG. 4. PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A050)

PARAMETRIC VALUES  
BETA .000 OFFSET 20.000  
MOUNT 1.000 PHI 225.000

SYMBOL THETA ALPHA MACH  
□ 112.500 28.720 3.480  
○ 135.000  
◇ 157.500

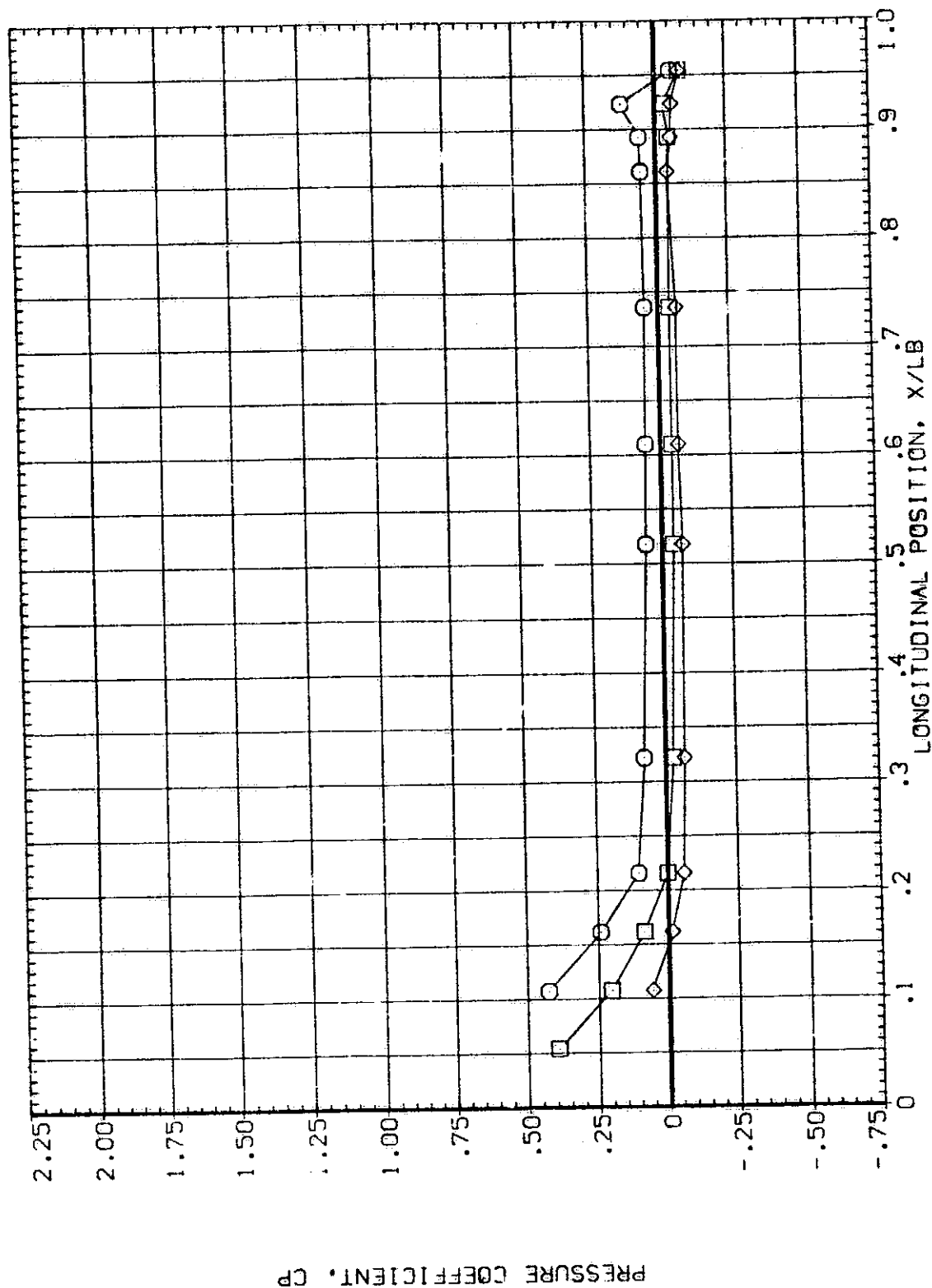


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES
○	180.000	28.720	3.480	.000 OFFSET
□	202.500			1.000 P-H
◇	225.000			20.000
				225.000

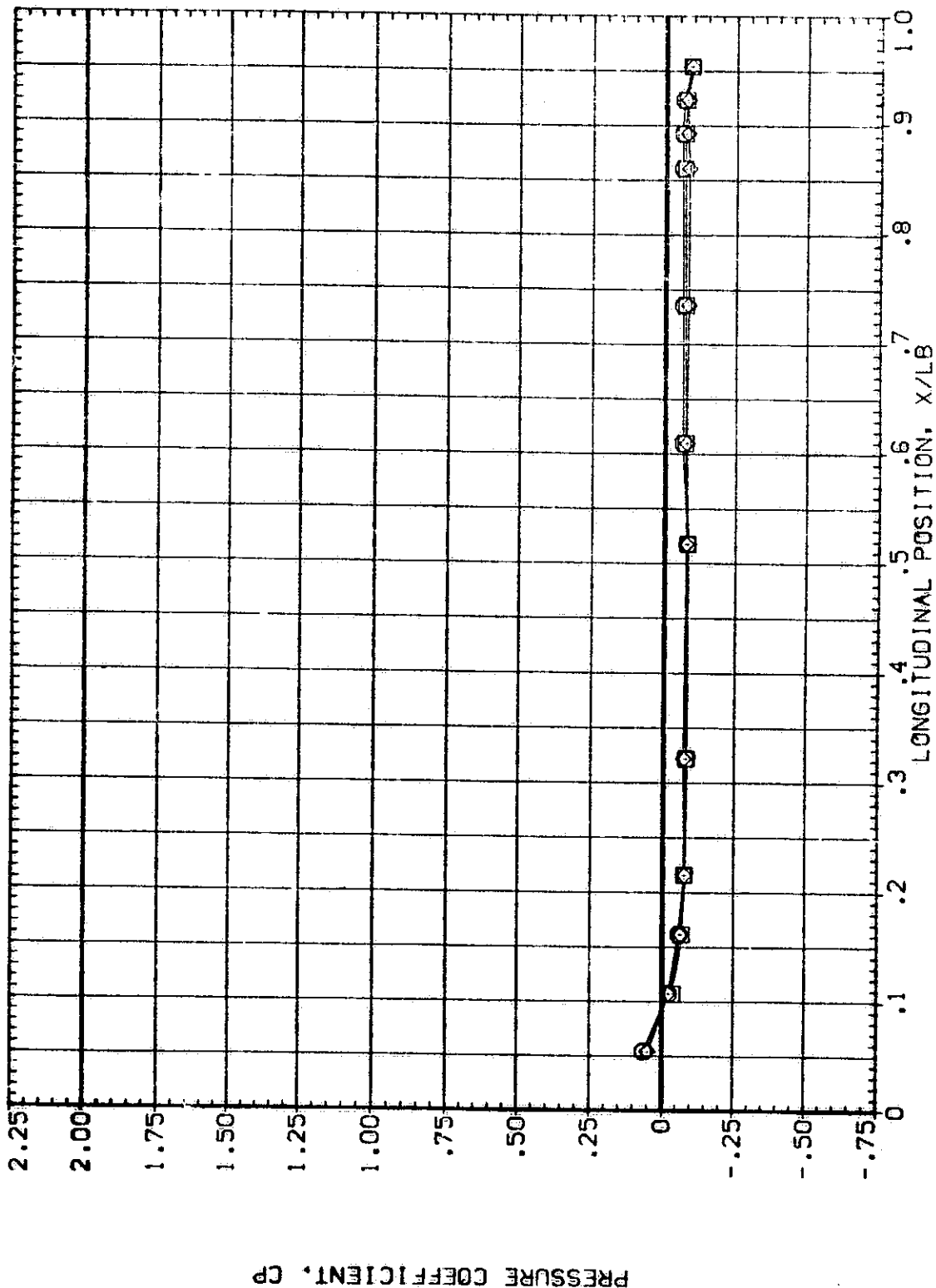


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
28.720  
MACH  
3.480

(PIA050)

PARAMETRIC VALUES  
BETA  
MOUNT  
1.000  
OFFSET  
20.000  
PHI  
225.000

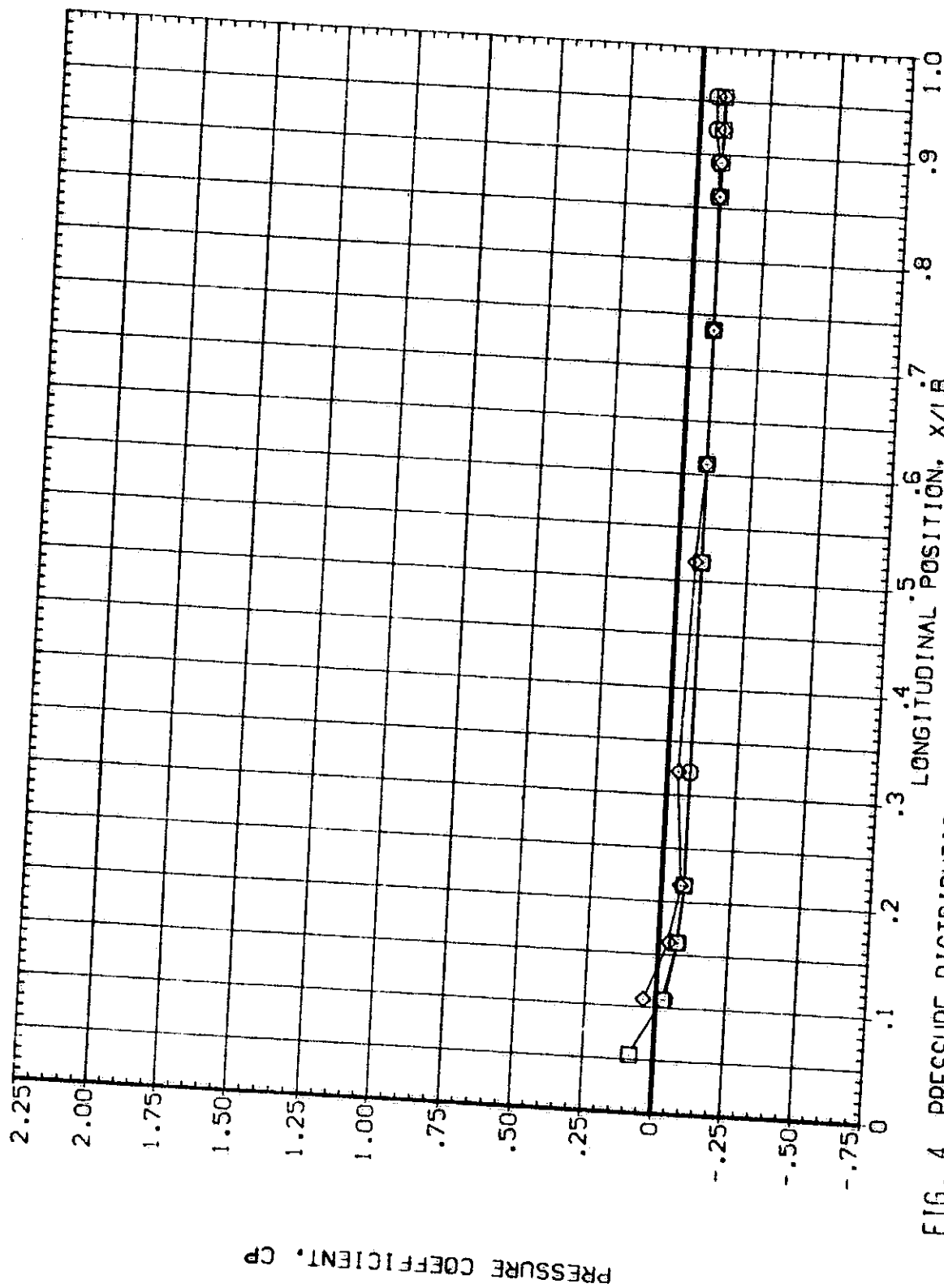


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	28.720	3.480	MOUNT	.000 OFFSET 20.000
□	326.000				1.000 PHI 225.000
◇	346.000				

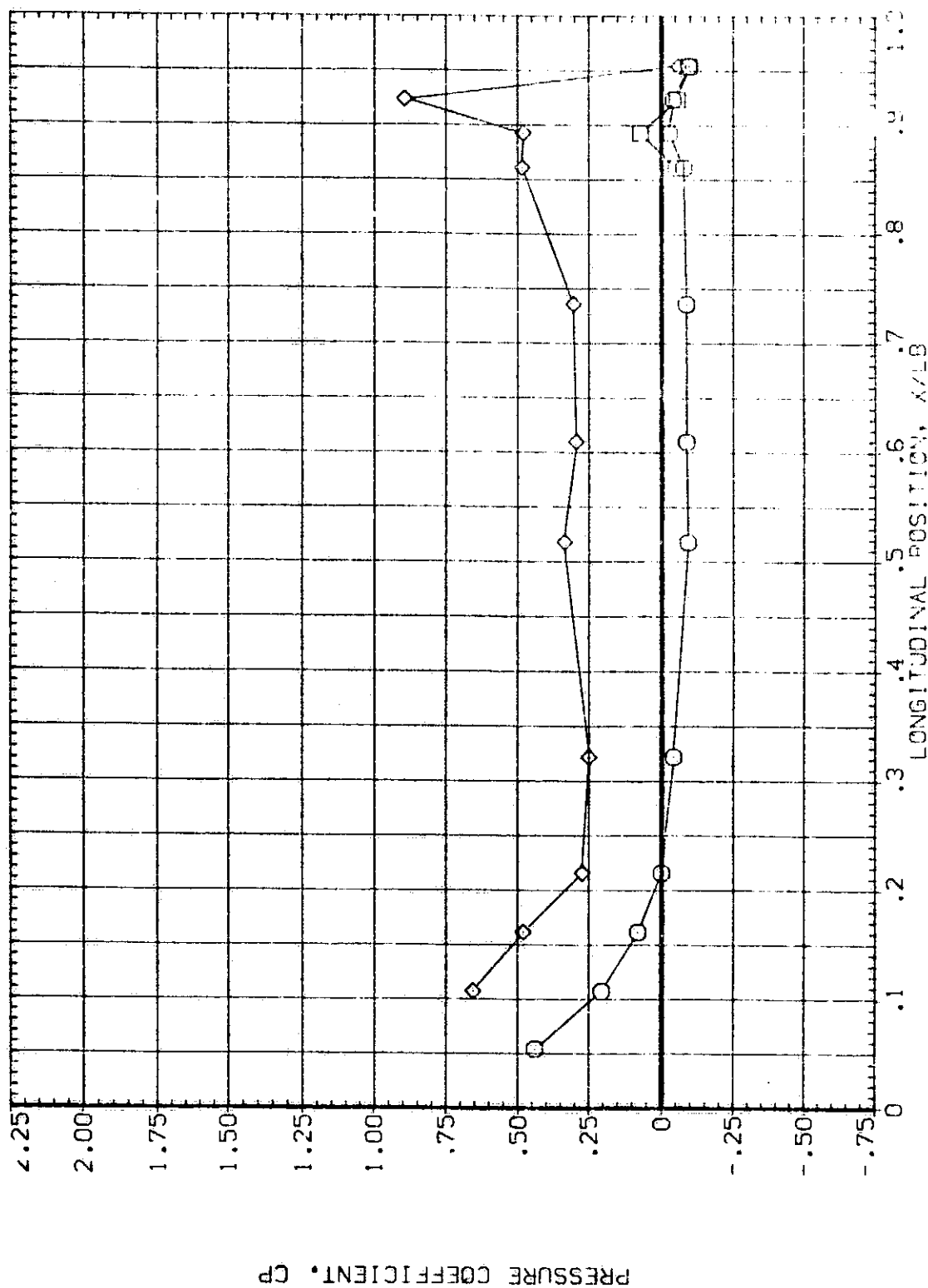


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA051)

SYMBOL  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 -8.360

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 P41

.000  
 270.000

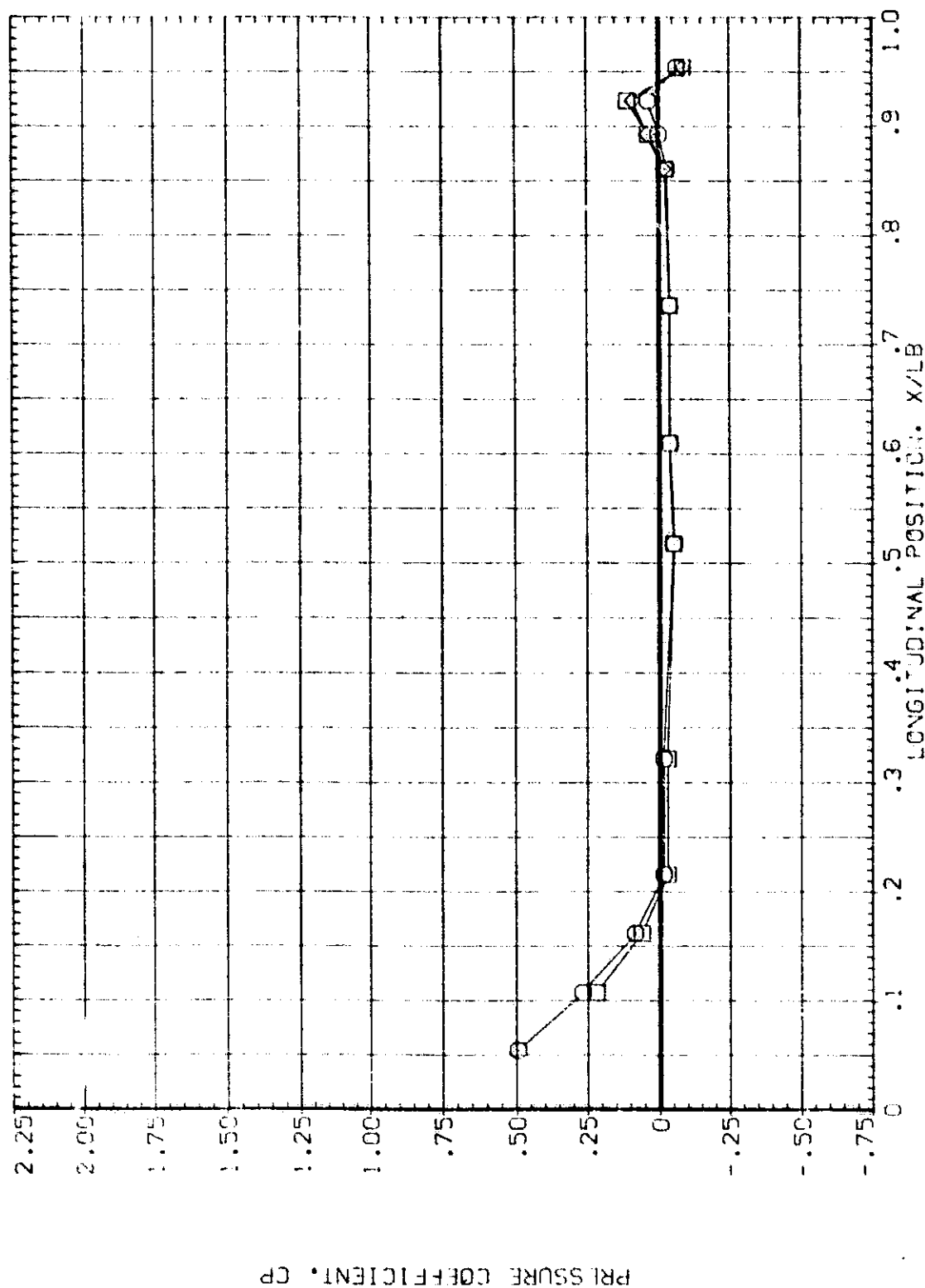


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL THETA ALPHA MACH  
 45.000 -8.360 3.400  
 67.500  
 90.000

PARAMETRIC VALUES  
 BETA .000 OFFSET .000  
 MOUNT 1.000 PHI 270.000

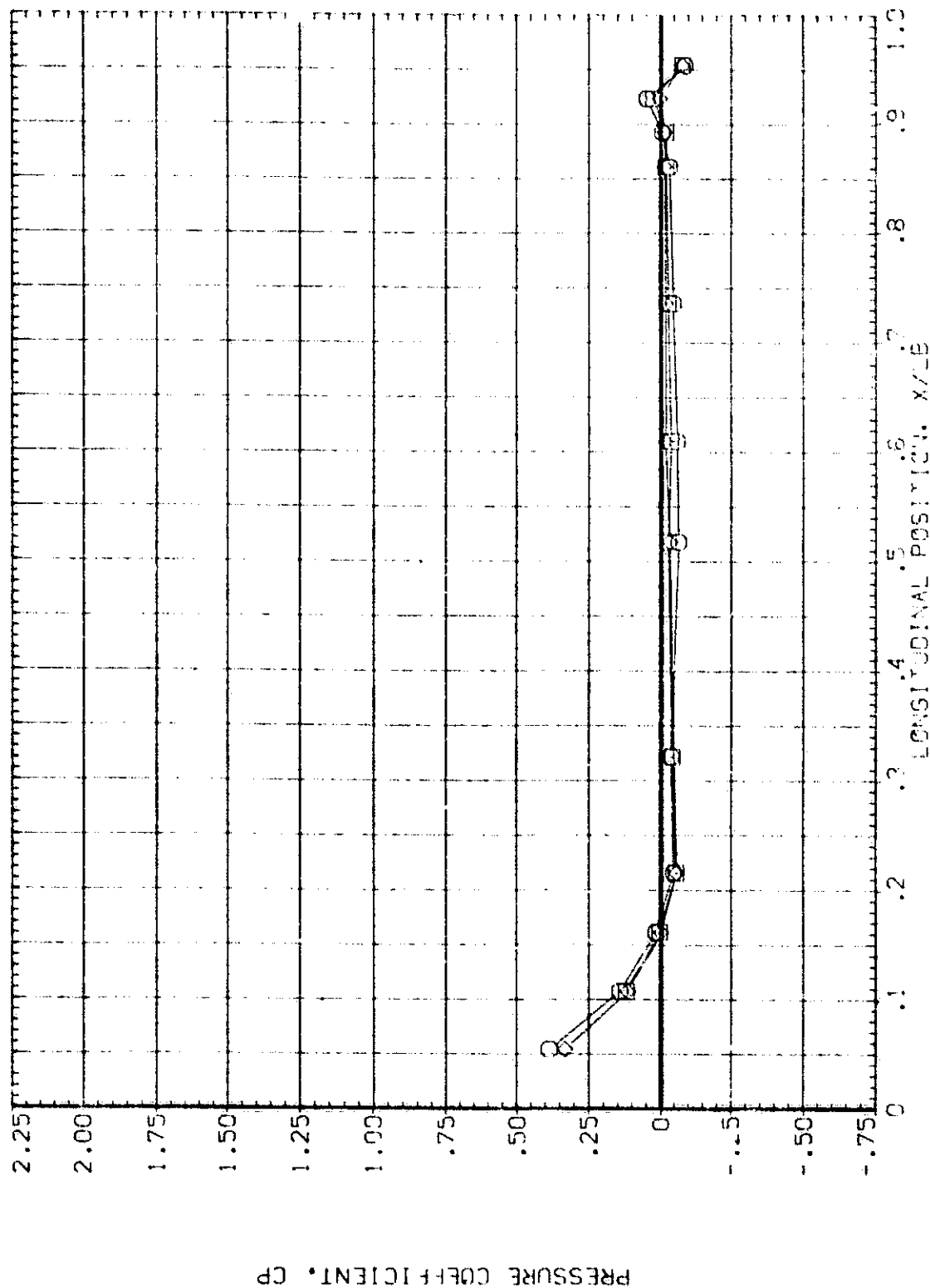


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH OPTIMUM SPACINGS



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A051)

SYMBOL  
○  
□  
◇

THETA  
112.500  
135.000  
157.500

ALPHA  
-8.360

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT

OFFSET  
PHI

.000  
1.000  
270.000

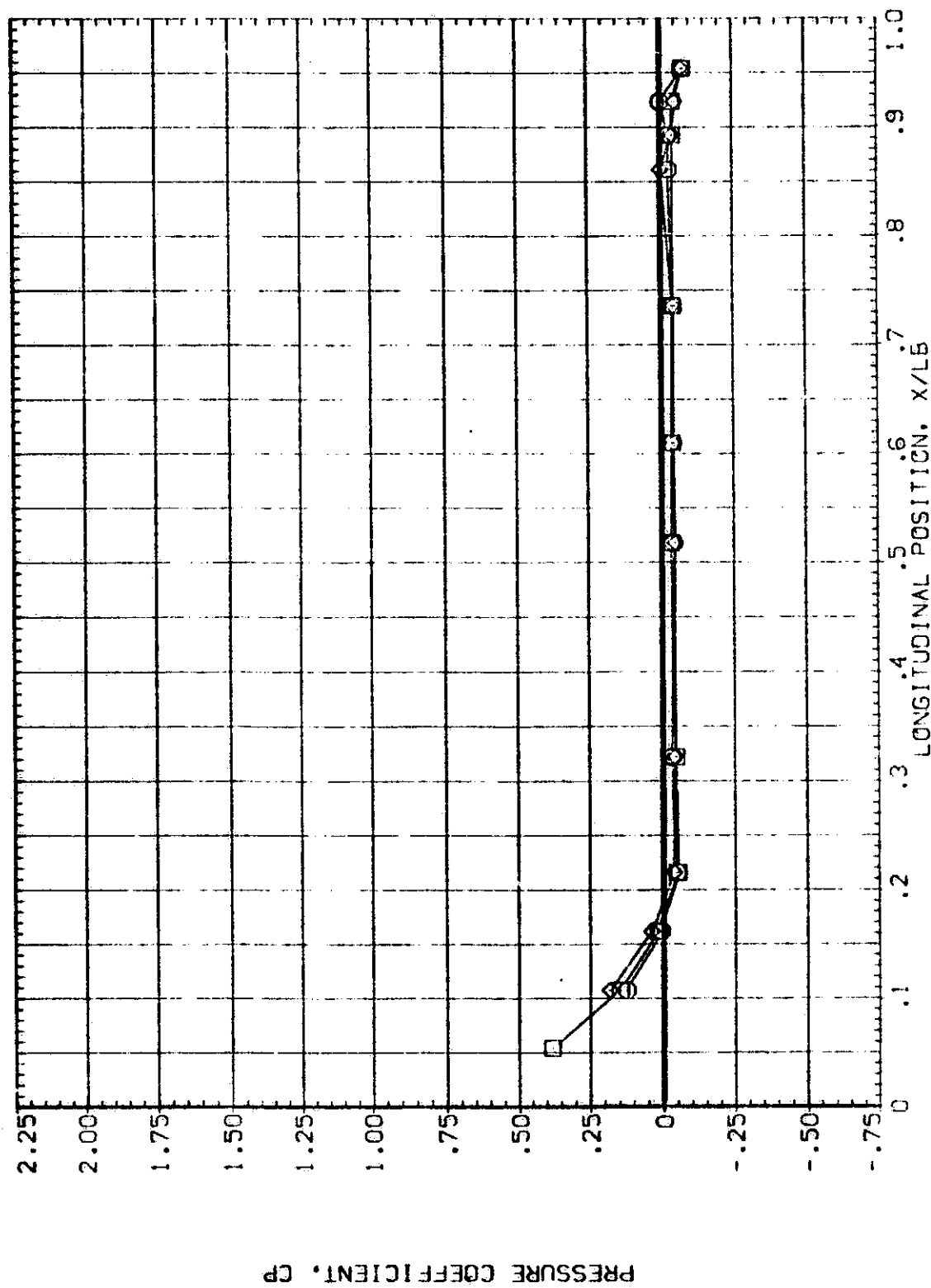


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	180.000	-8.360	3.480	MOUNT	.000
□	202.500			OFFSET	.000
◇	225.000			PHI	270.000

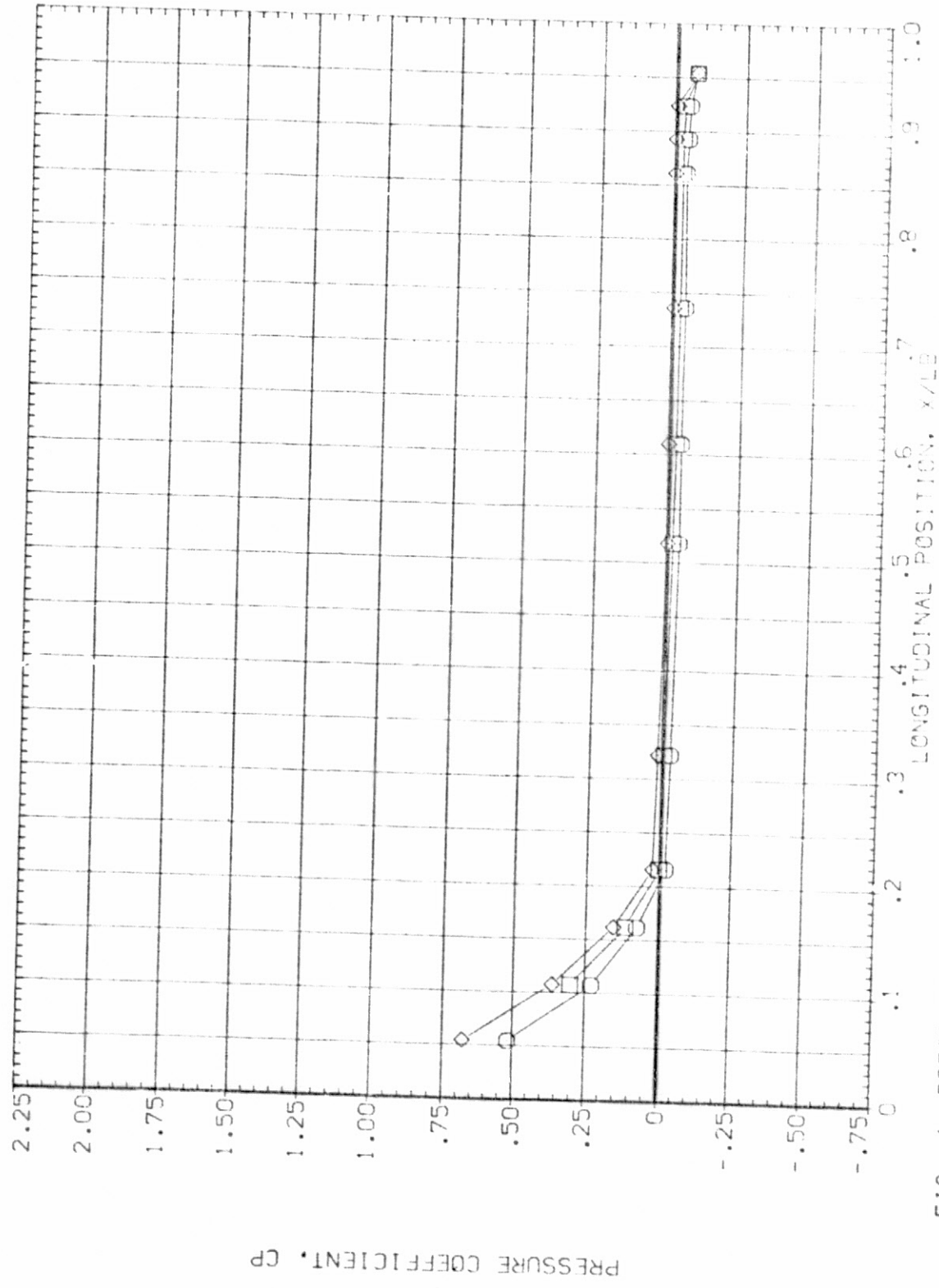


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA051)

SYMBOL  
 ○ □ ◇

THETA  
 247.500  
 270.000  
 292.500

ALPHA  
 -8.360

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 PH1

OFFSET  
 .000  
 270.000

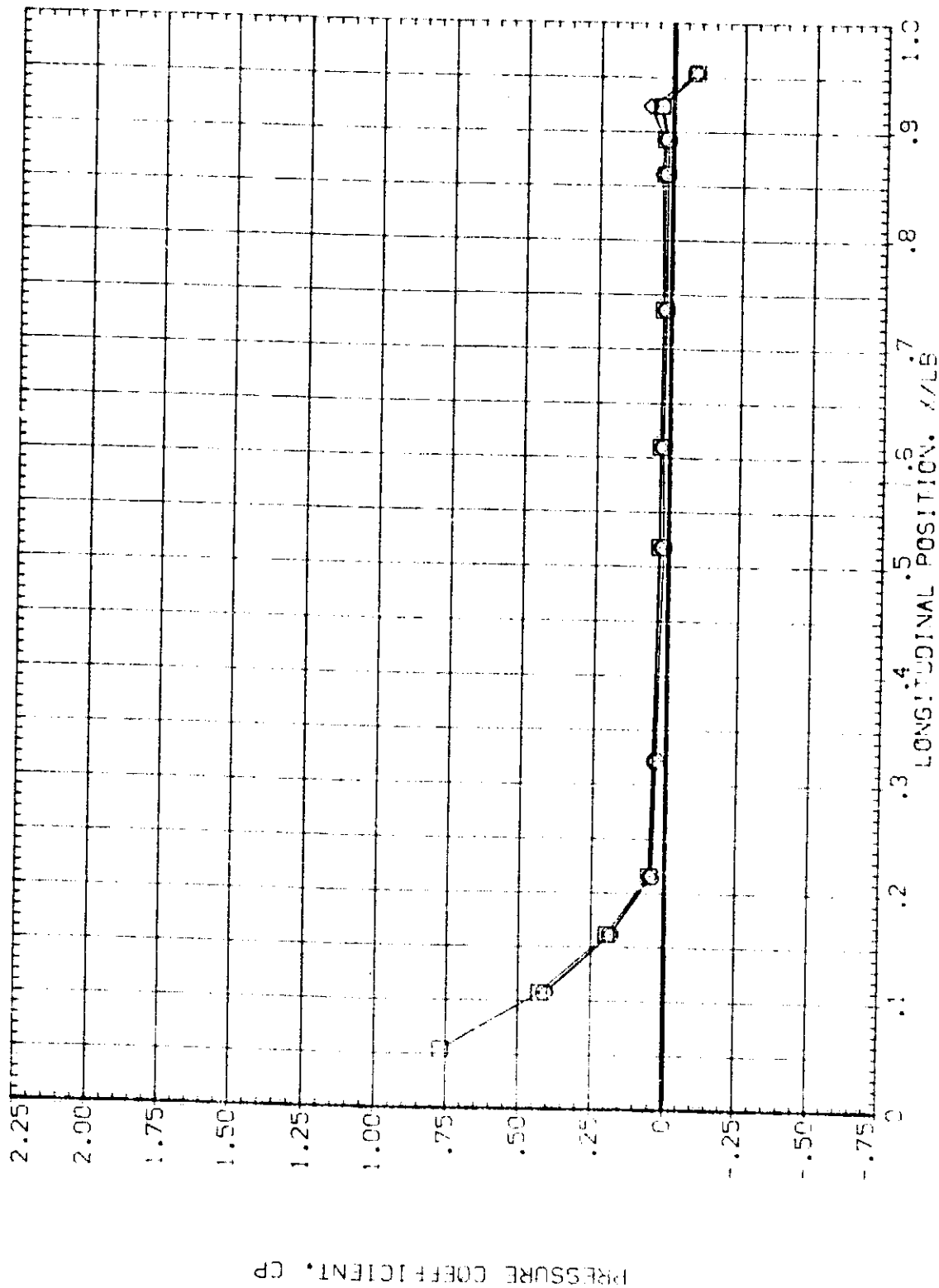


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
○	315.000	-3.360	3.480	BETA	.000	OFFSET
◇	326.000			MDUNT	1.000	PHI
◇	346.000					270.000

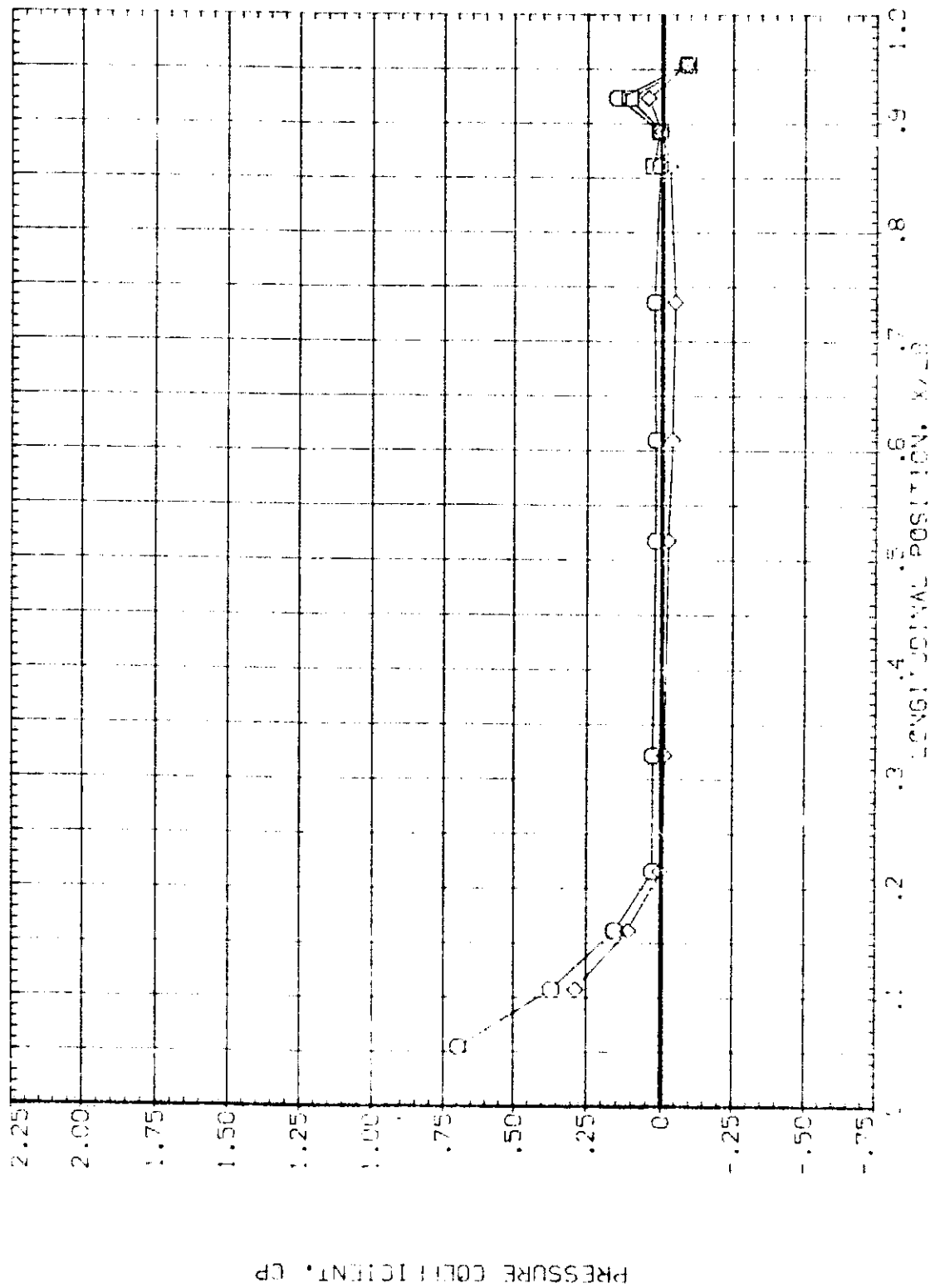


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUDANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA052)

SYMBOL THETA ALPHA MACH  
 O .000 -4.330 3.480  
 □ 14.000  
 ◇ 24.000

PARAMETRIC VALUES  
 BETA .000 OFFSET .000  
 MOUNT 1.000 PH1 270.000

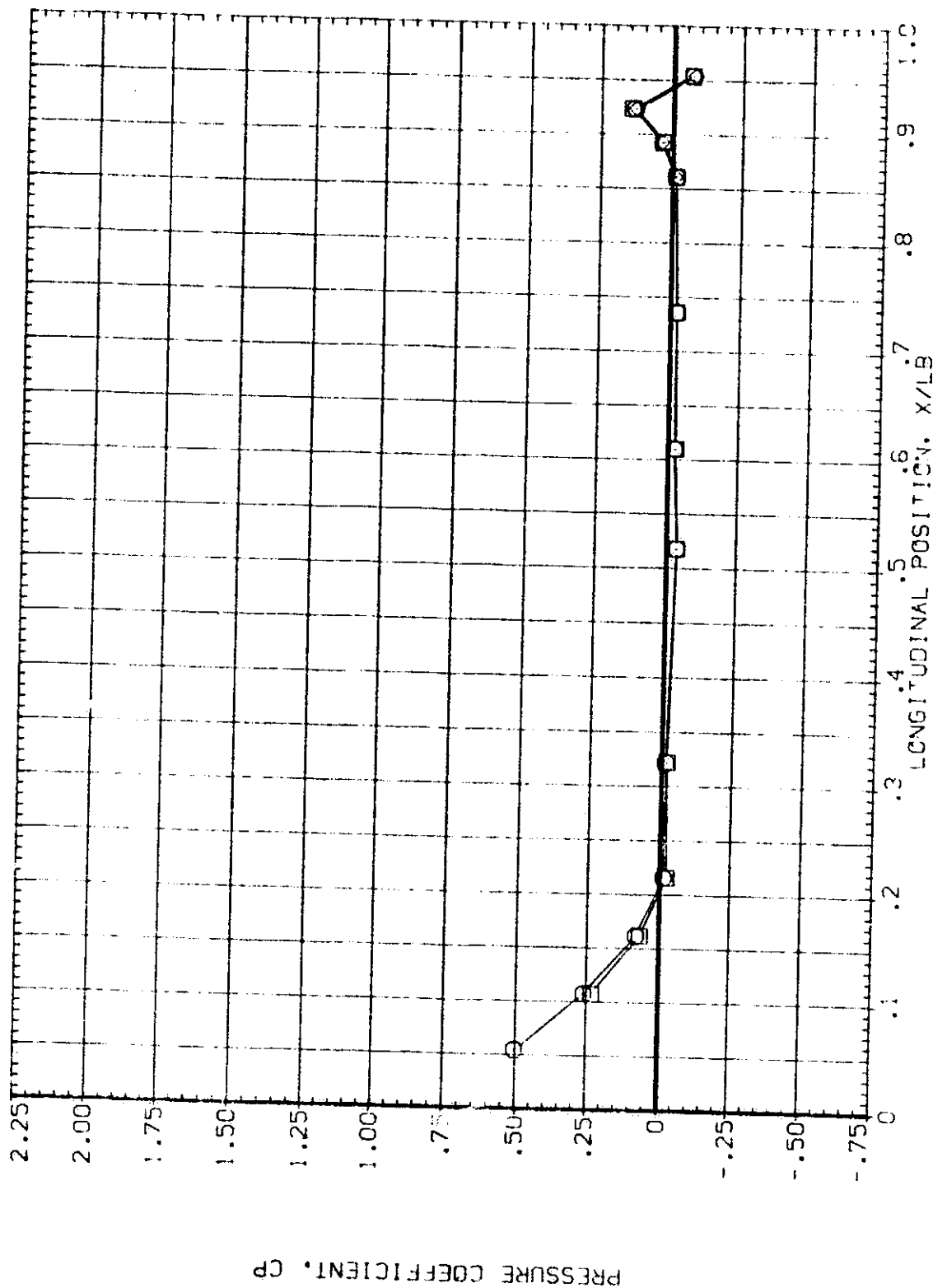


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ◇  
 □  
 ○

THETA 45.000  
 67.500  
 90.000

ALPHA -4.330

MACH 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 270.000  
 OFFSET  
 PHI

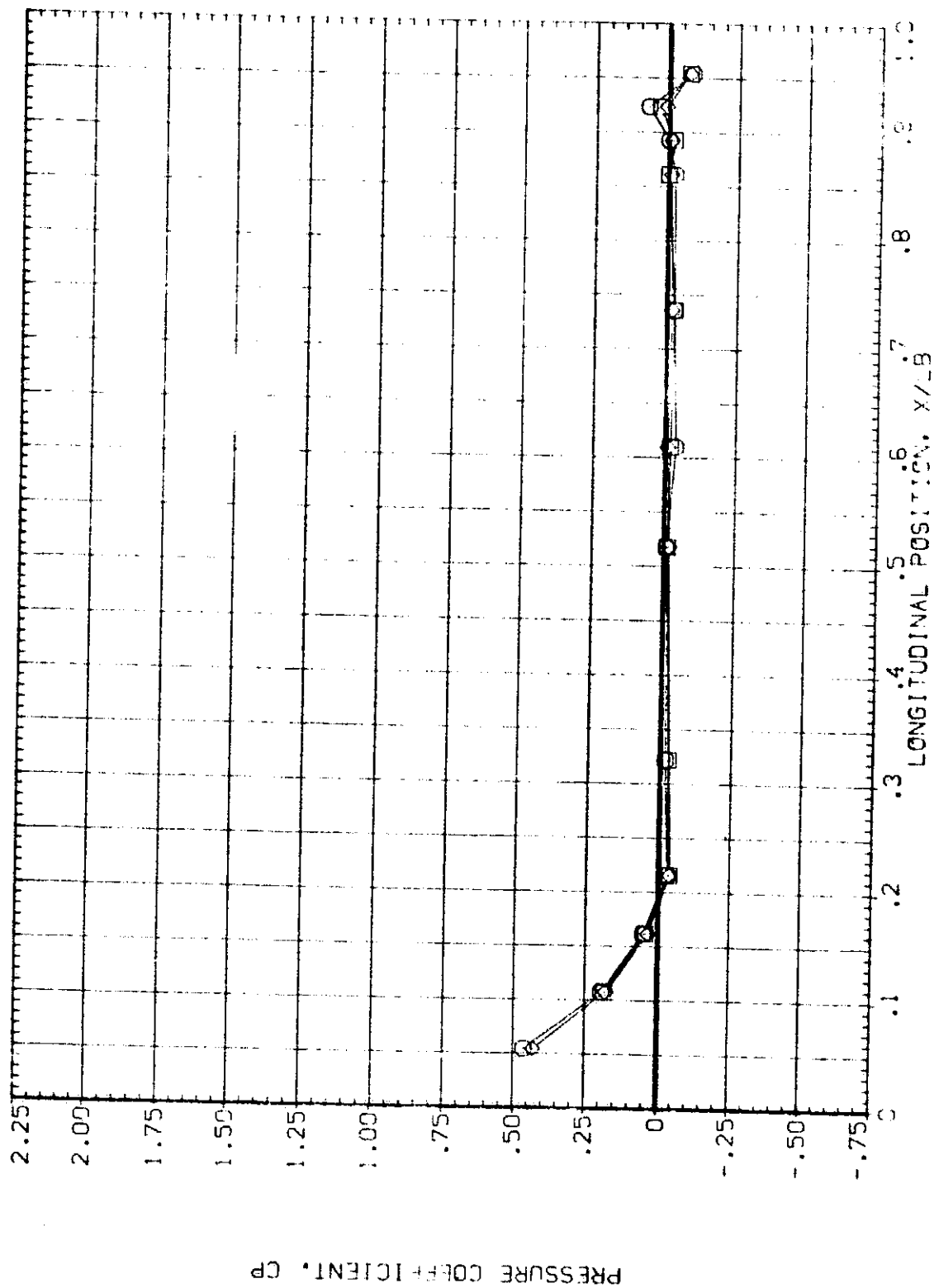


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH 999 TUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A052)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
○	112.500	-4.330	3.480	BETA	.000	OFFSET
□	135.000			MOUNT	1.000	PHI
◇	157.500					270.000

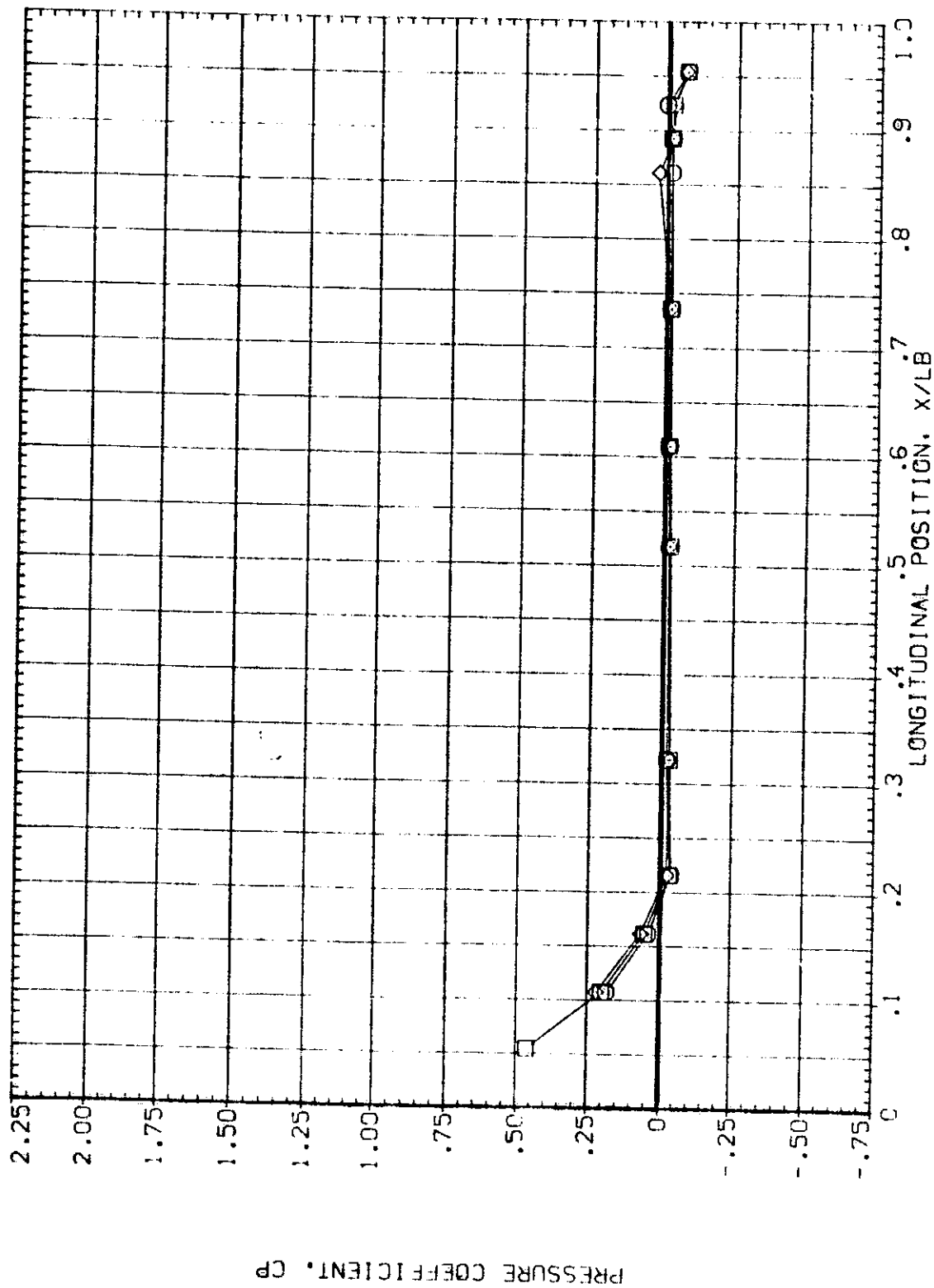


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL THETA ALPHA MACH  
 180.000  
 202.500  
 225.000

PARAMETRIC VALUES  
 BETA .000  
 MC 17 1.000  
 OFFSET 270.000  
 PHI

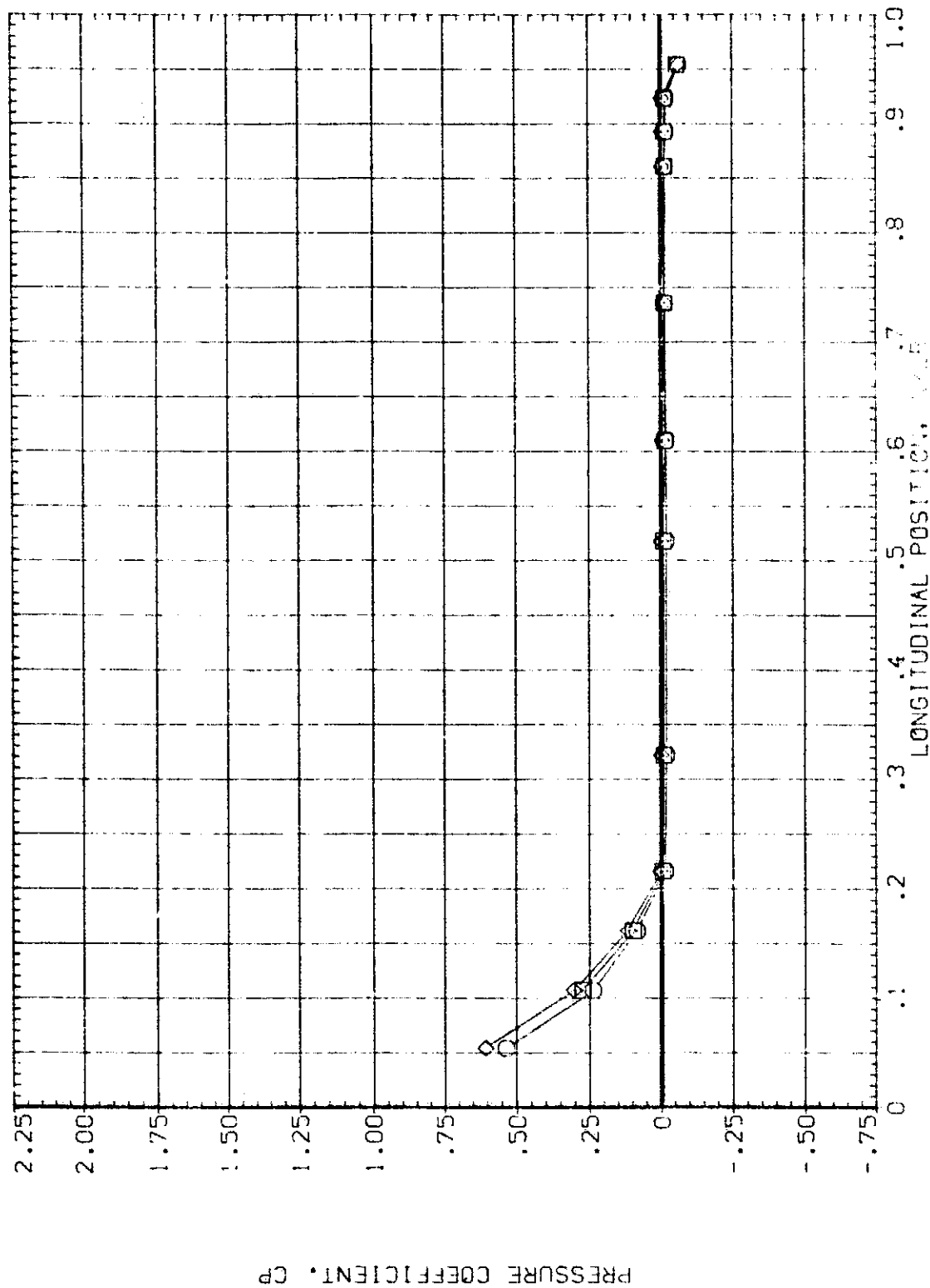


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUDANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA052)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
-4.330

MACH  
3.480

PARAMETRIC VALUES

.000 .000

PHI

1.000

BETA  
MOUNT

270.000

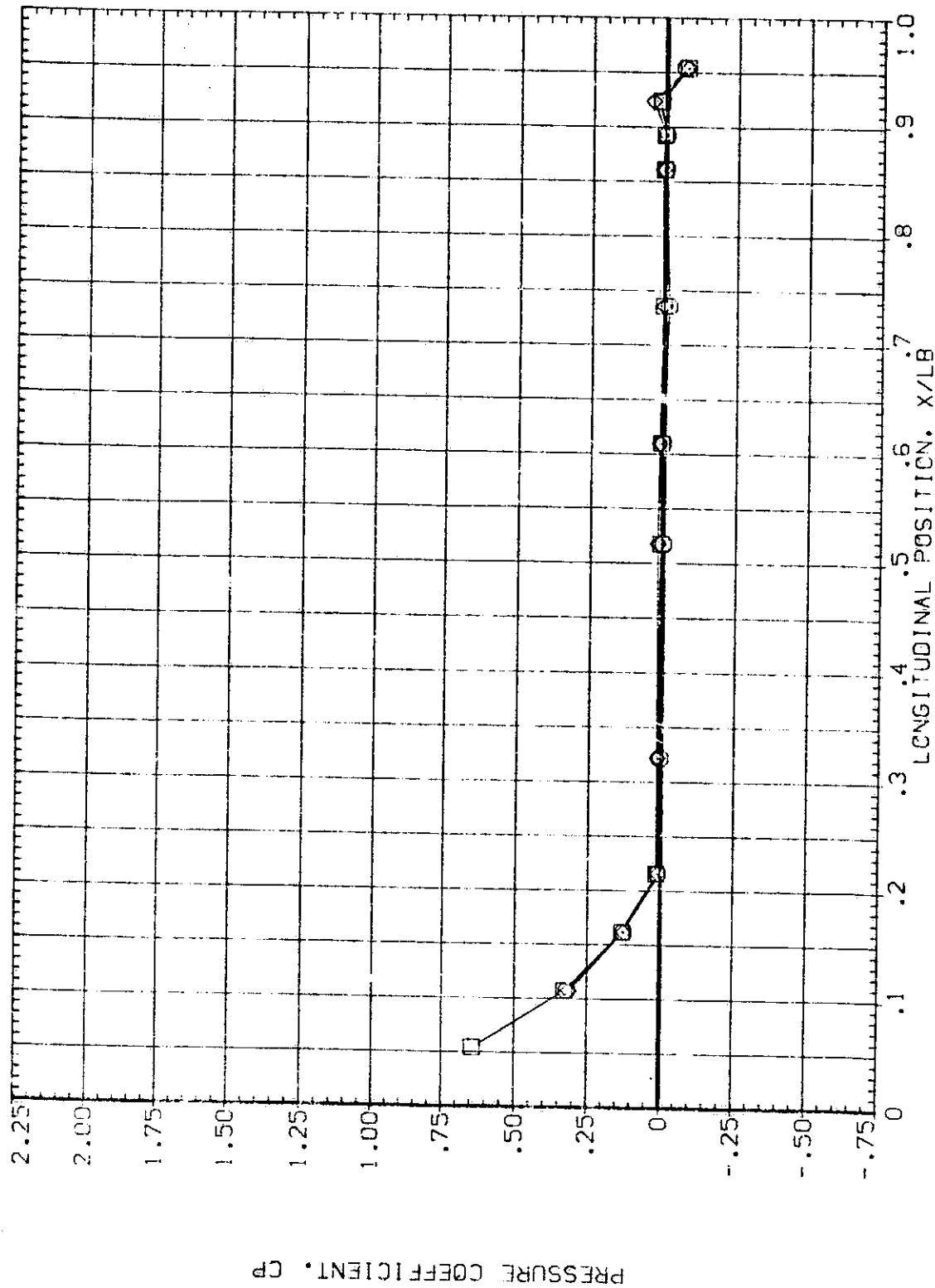


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARABOLIC VALUES
□	315.000	-4.330	3.480	ETA
○	326.000			1000
◇	346.000			270.000
				OFFSET
				1.000
				PHI

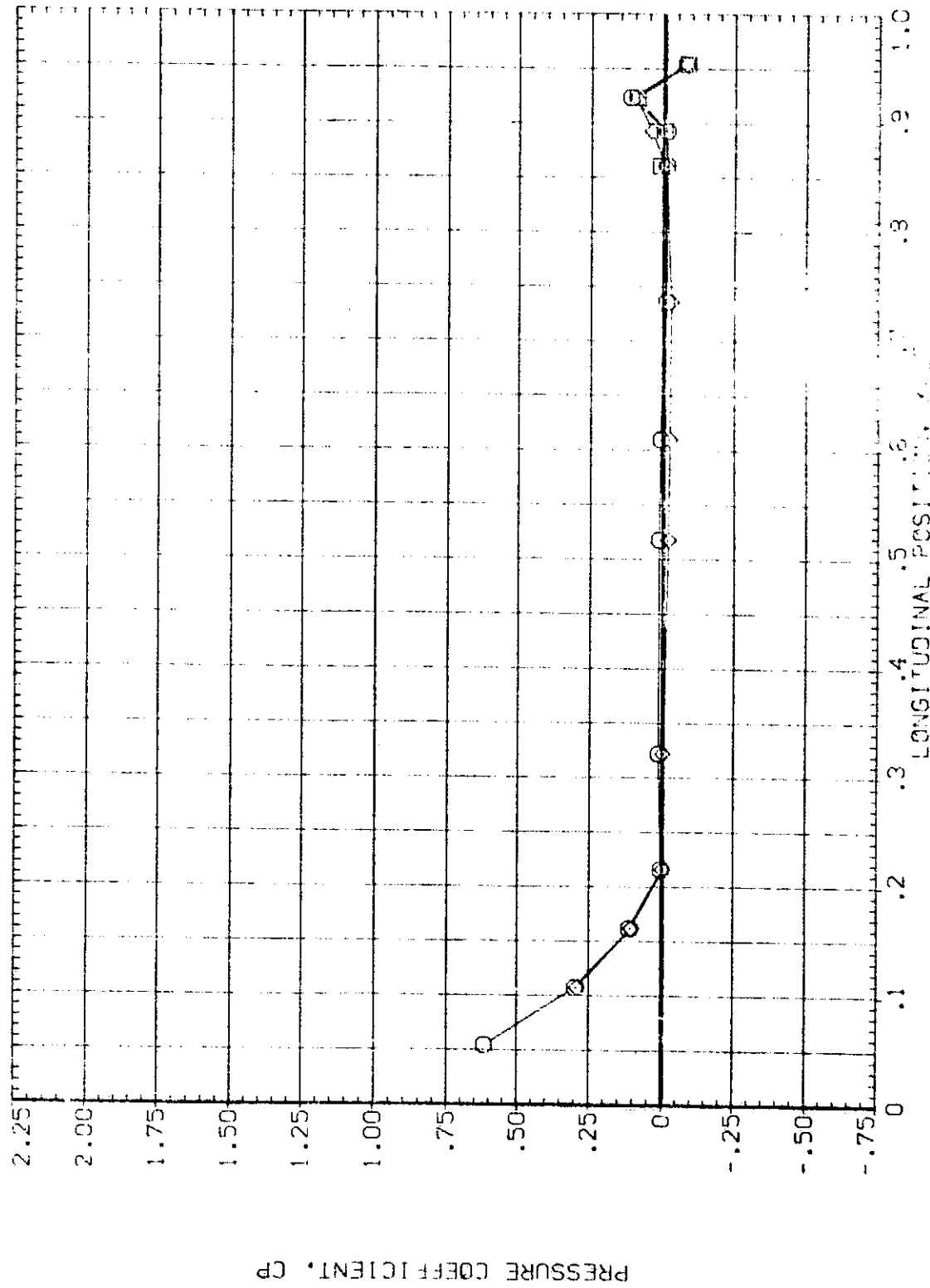


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL AT 3.480 MACH

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A053)

SYMBOL  
 O  
 ◇

THETA .000  
 14.000  
 24.000

ALPHA -.280

MACH 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 PH: 270.000

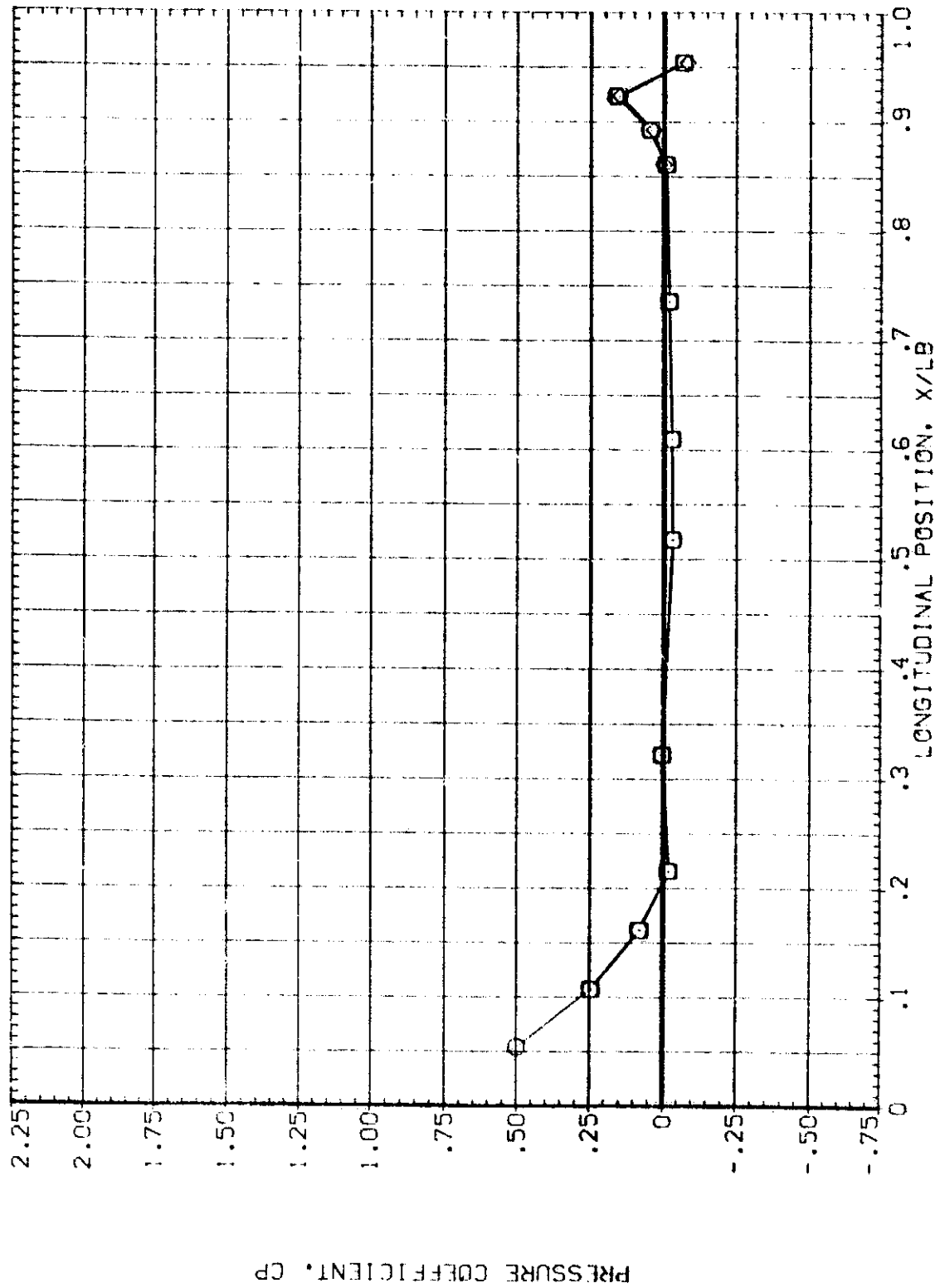


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
BETA .000  
OFFSET 270.000  
MGLN 0.000

THETA .280  
MACH 3.480

SYMBOL  
45,000  
67,500  
90,000

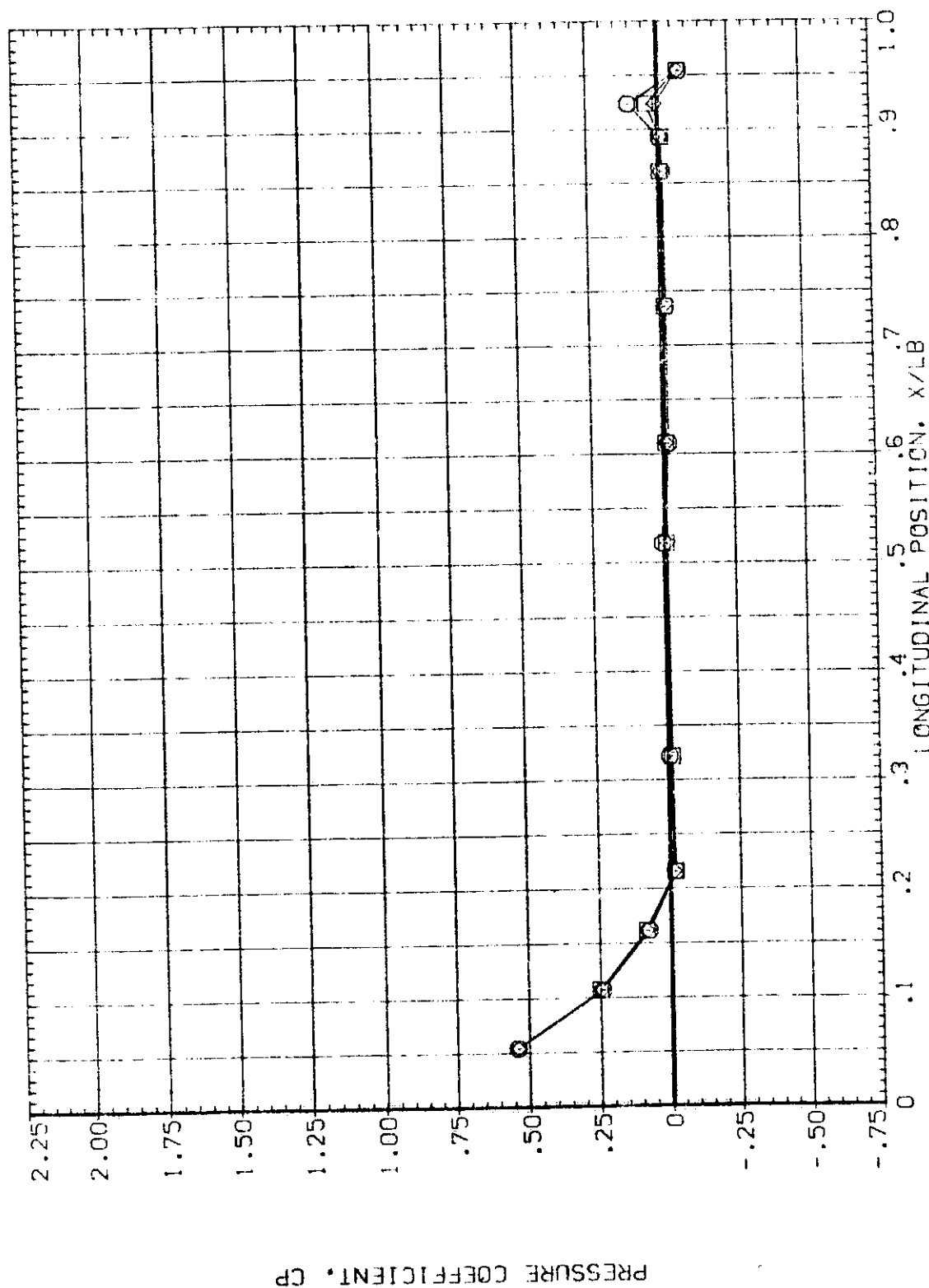


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (P1A053)

SYMBOL THETA ALPHA MACH  
 O 112.500  
 □ 135.000  
 ◇ 157.500

BETA  
MCUNT

PARAMETRIC VALUES  
 .000 .000  
 1.000 OFFSET  
 270.000 PHI

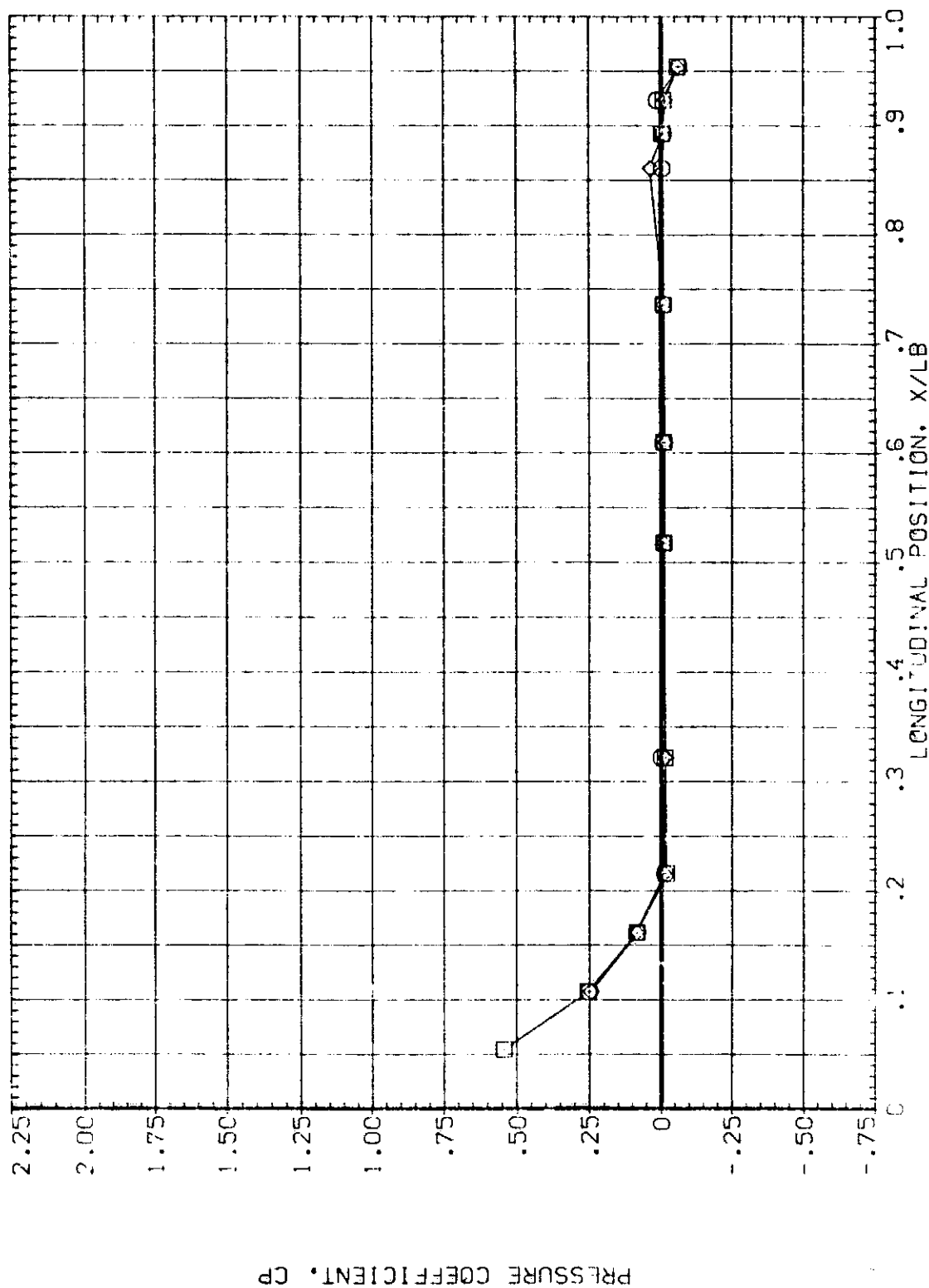


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, 71 (D1A053)

SYMBOL  
120.000  
200.500  
225.000

THETA  
120.000  
200.500  
225.000

ALPHA  
-1.250  
-1.480  
-1.480

MACH  
3.480  
3.480  
3.480

BAROMETRIC VALUES  
1000  
0.000  
0.000

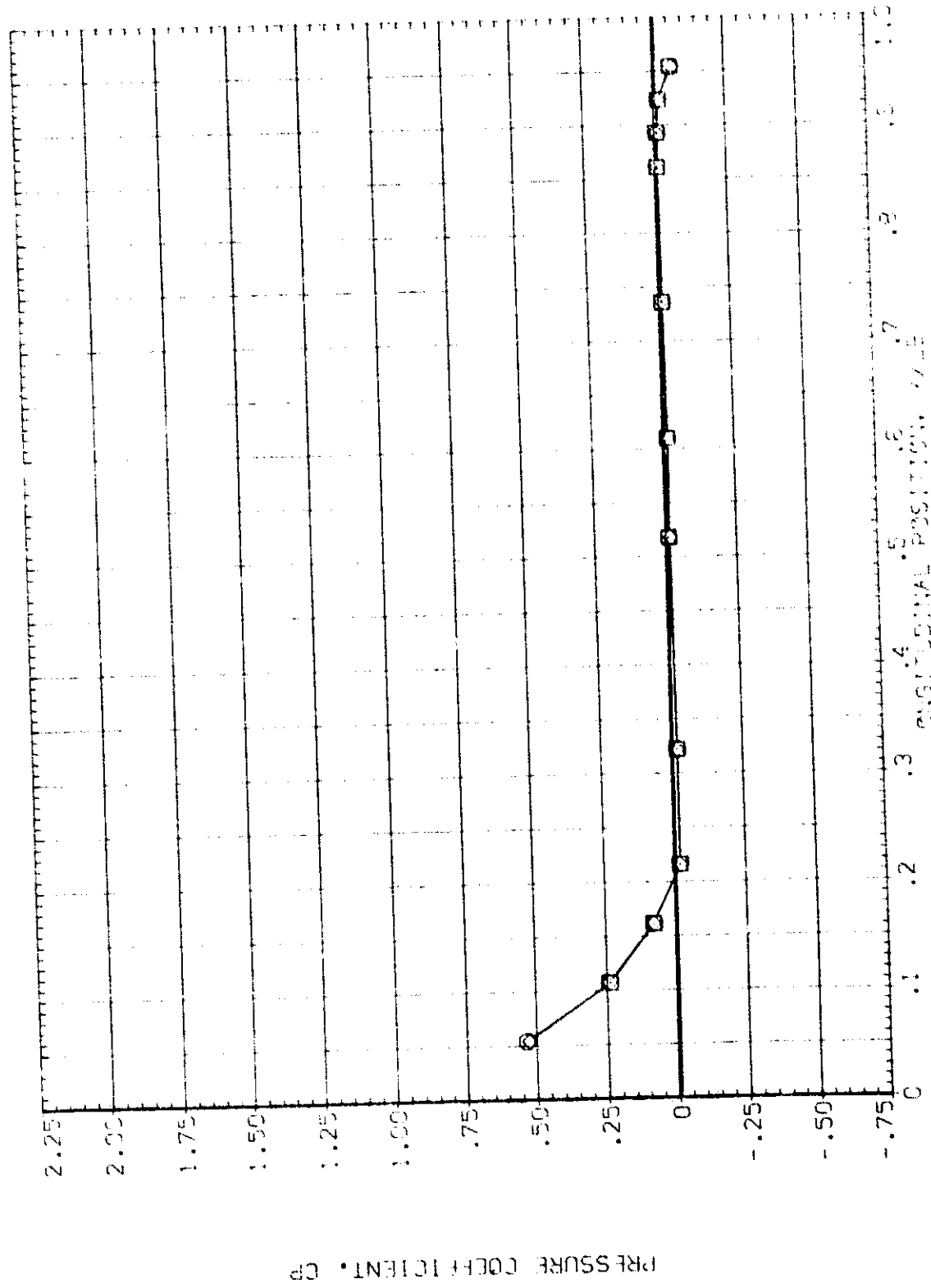


FIG. 4 PRESSURE DISTRIBUTION OVER ET - 71 MODEL WITH 1000 LBS. SPACERS

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A053)

SYMBOL  
 O  
 □  
 ◇

THETA  
 247.500  
 270.000  
 292.500

ALPHA  
 -1.280  
 -1.280

WACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PH1  
 270.000

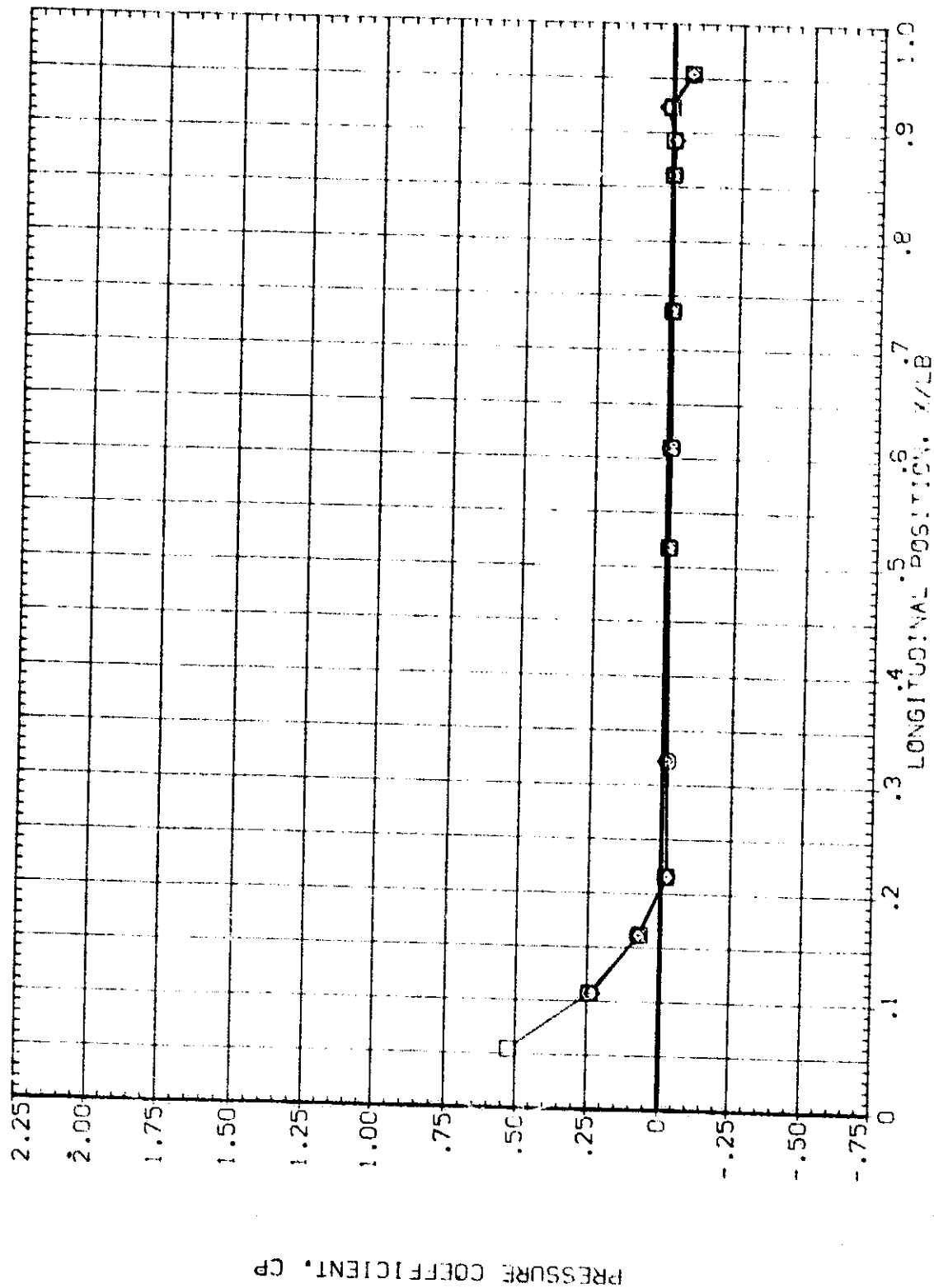


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



PARAMETRIC VALUES  
 .000 .000 .000  
 .000 .000 .000  
 .000 .000 .000

MACH  
 3.480

ALPHA  
 -.280

THETA  
 315.000

SYMBOL  
 326.000  
 345.000

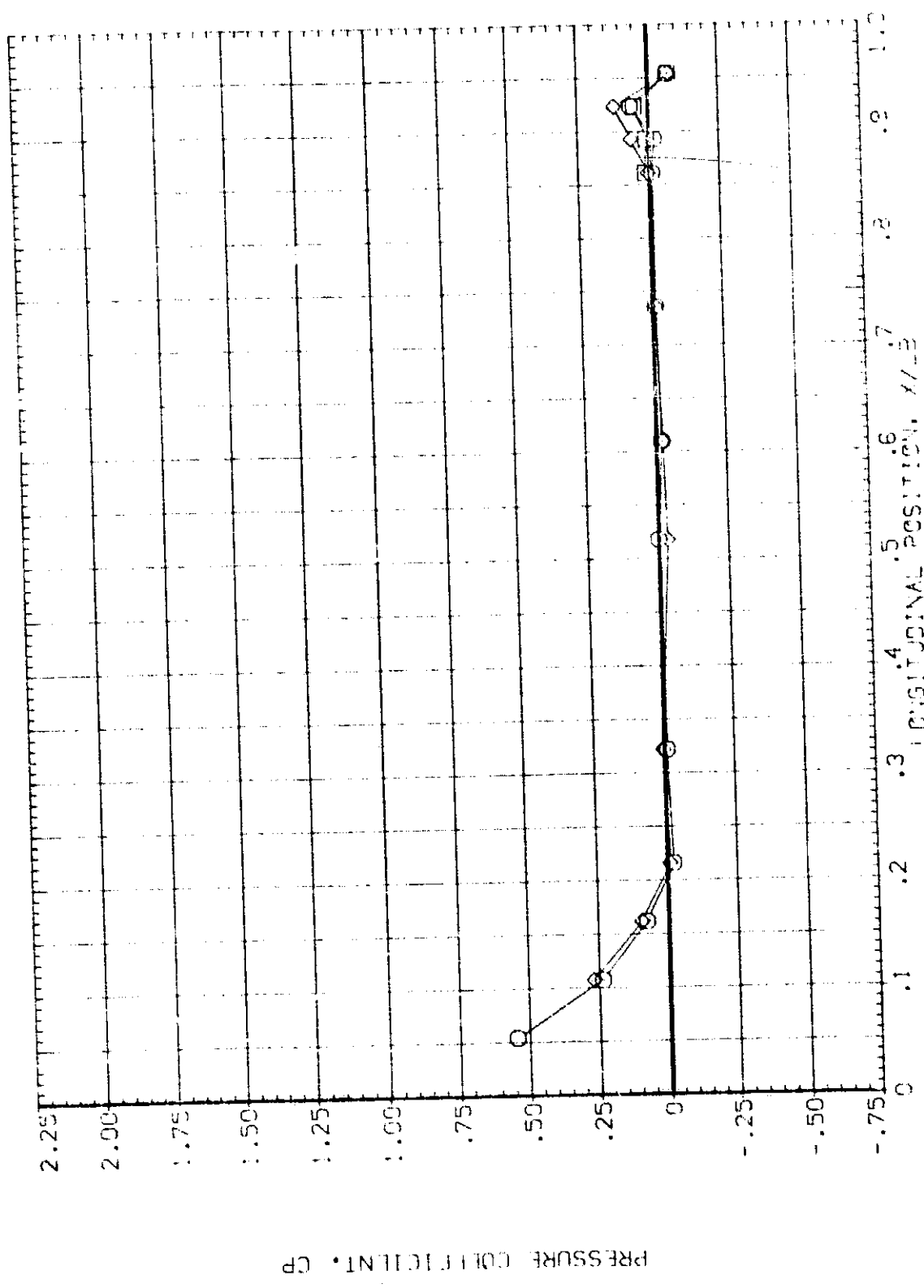


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODE WITH EIGHT DEGREE

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA054)

SYMBOL	THETA .000 14.000 24.000	ALPHA 3.790	MACH 3.480	PARAMETRIC VALUES		
				BETA MOUNT	.000 OFFSET	.000 PHI
○					1.000	270.000
□						
◇						

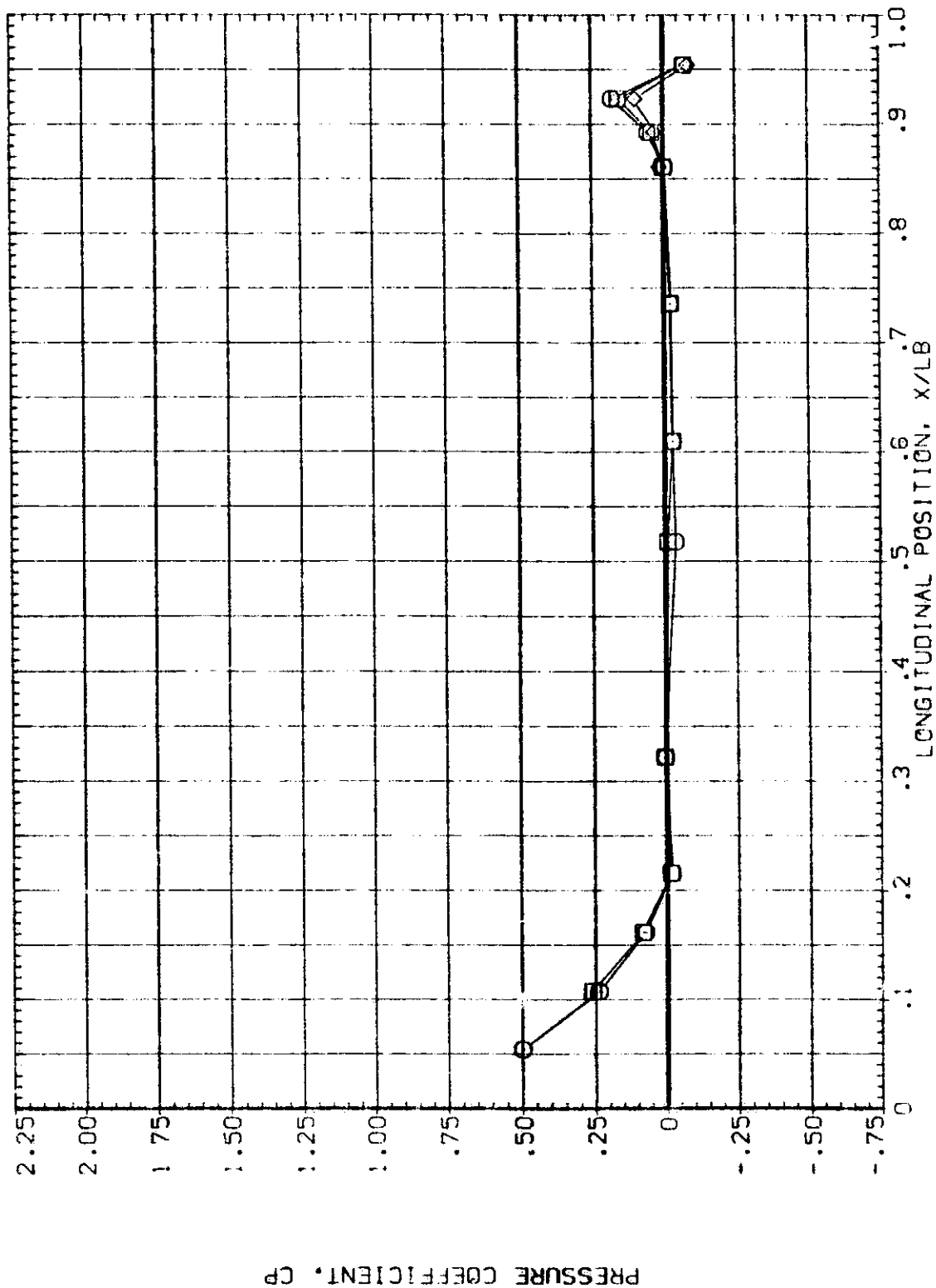


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A054)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	45.000	67.500	90.000	3.790	3.480		BETA	OFFSET	PHI	
◇							0.000	1.000	0.000	270.000

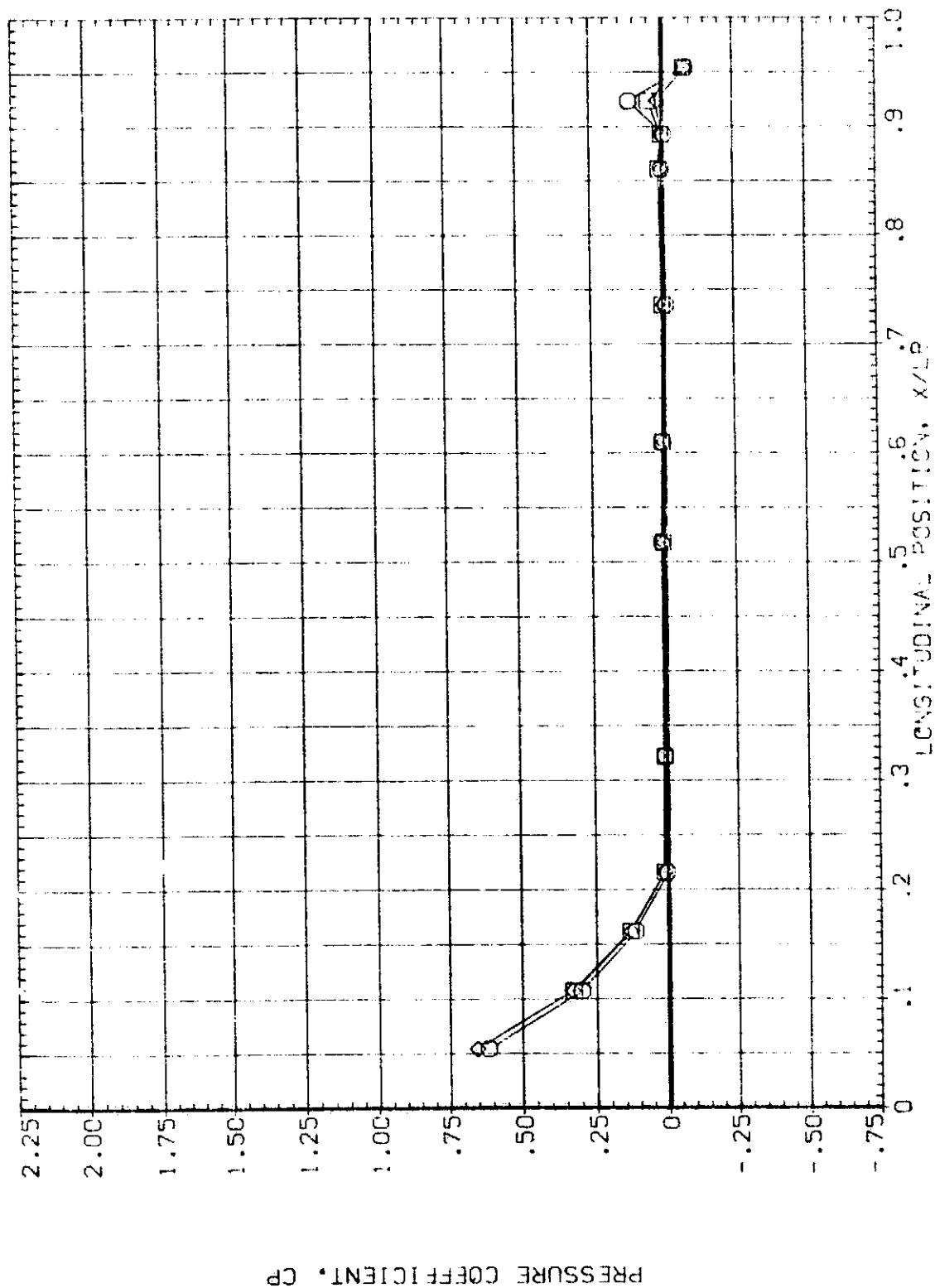


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA054)

SYMBOL  
 O  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 3.790  
 3.480

MACH  
 3.480

PARAMETRIC VALUES  
 BETA  
 MOUNT  
 .000  
 1.000  
 .000  
 270.000  
 PHI

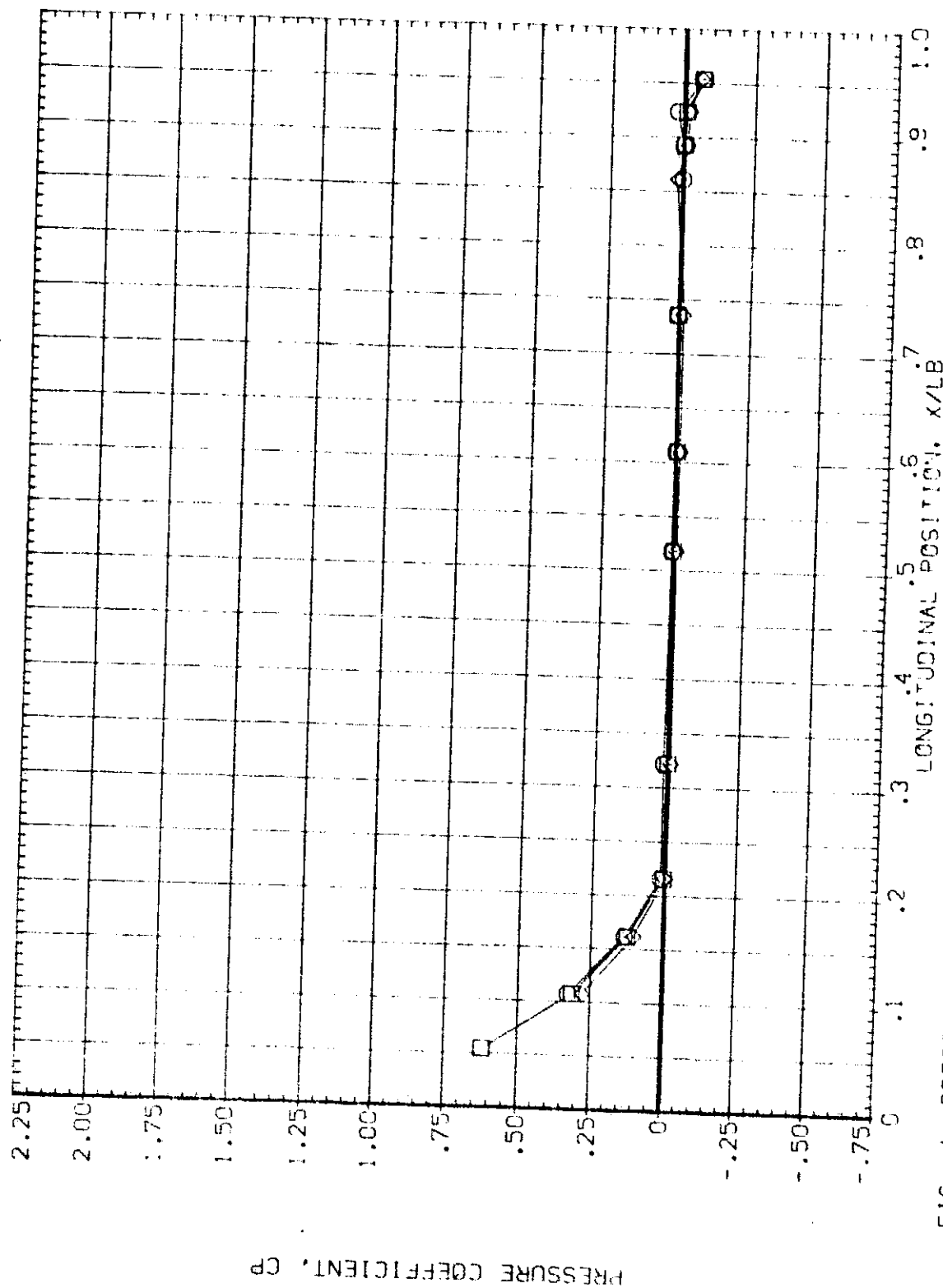


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTRUDANCES

SYMBOL  
 ○ □ ◇

THETA 180.000  
 202.500  
 225.000

ALPHA 3.790

MACH 3.480

PARAMETRIC VALUES

BETA .000  
 MOUNT 1.000  
 P-41 .001  
 270.000

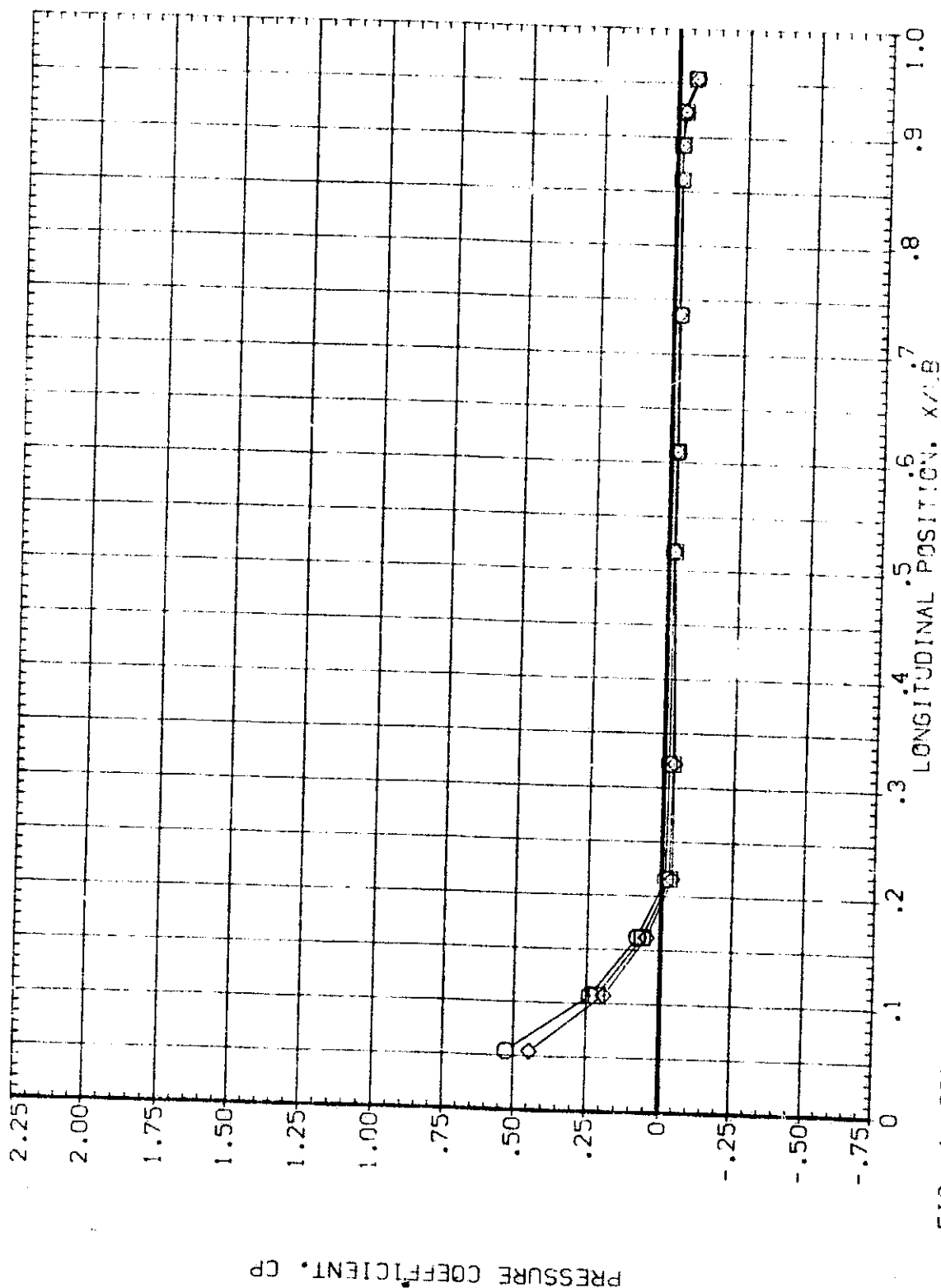


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A054)

SYMBOL  
□  
◇

THETA  
247.500  
270.000  
292.500

ALPHA  
3.790

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
270.000

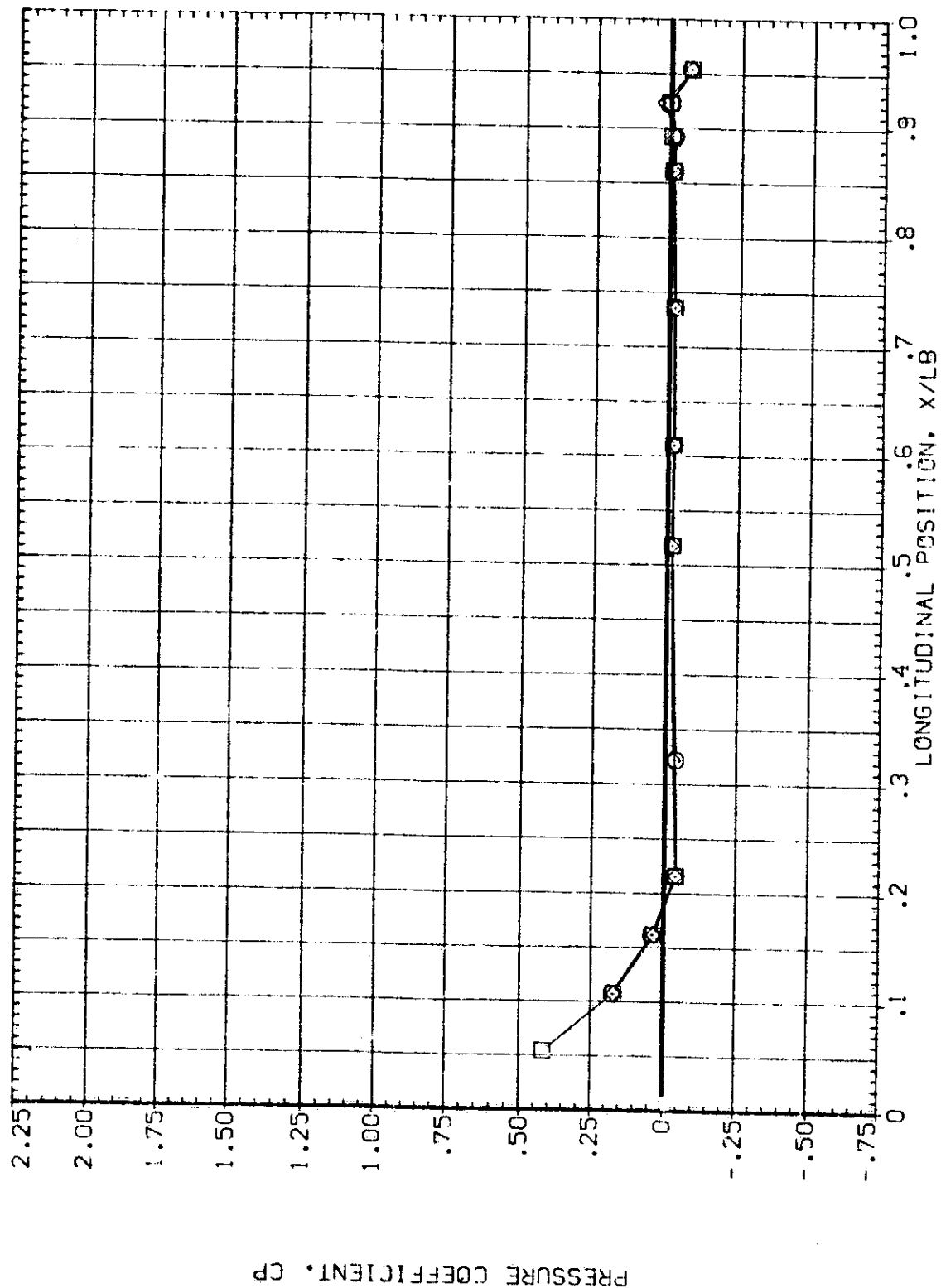


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
3.790

MACH  
3.480

PARAMETRIC VALUES

BETA  
HOUNT

.000  
1.000  
270.000  
OFFSET  
PHI

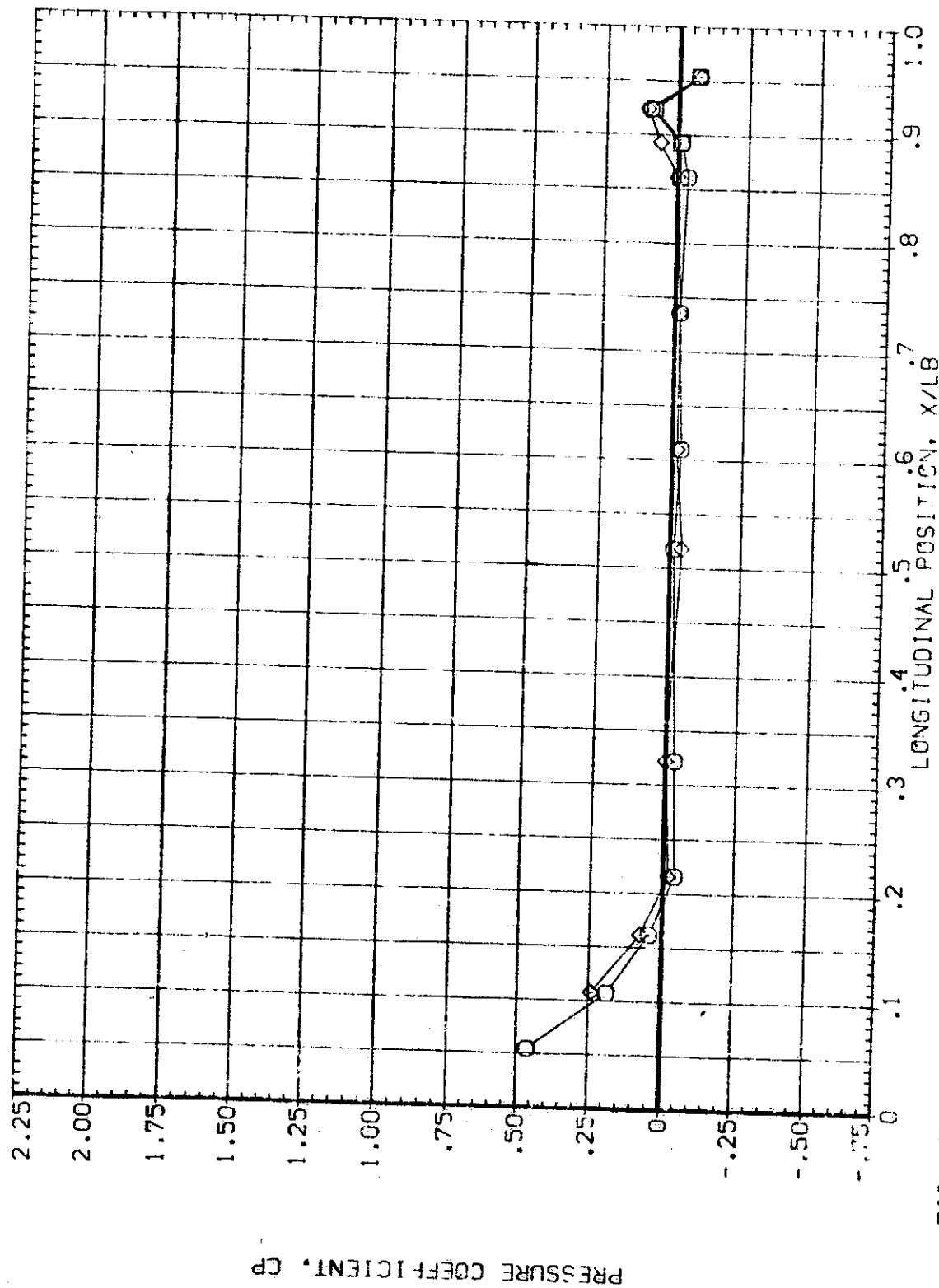


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A055)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSE?	PHI
○	.000	7.800	3.480	1.000	.000	270.000
□	14.000					
◇	24.000					

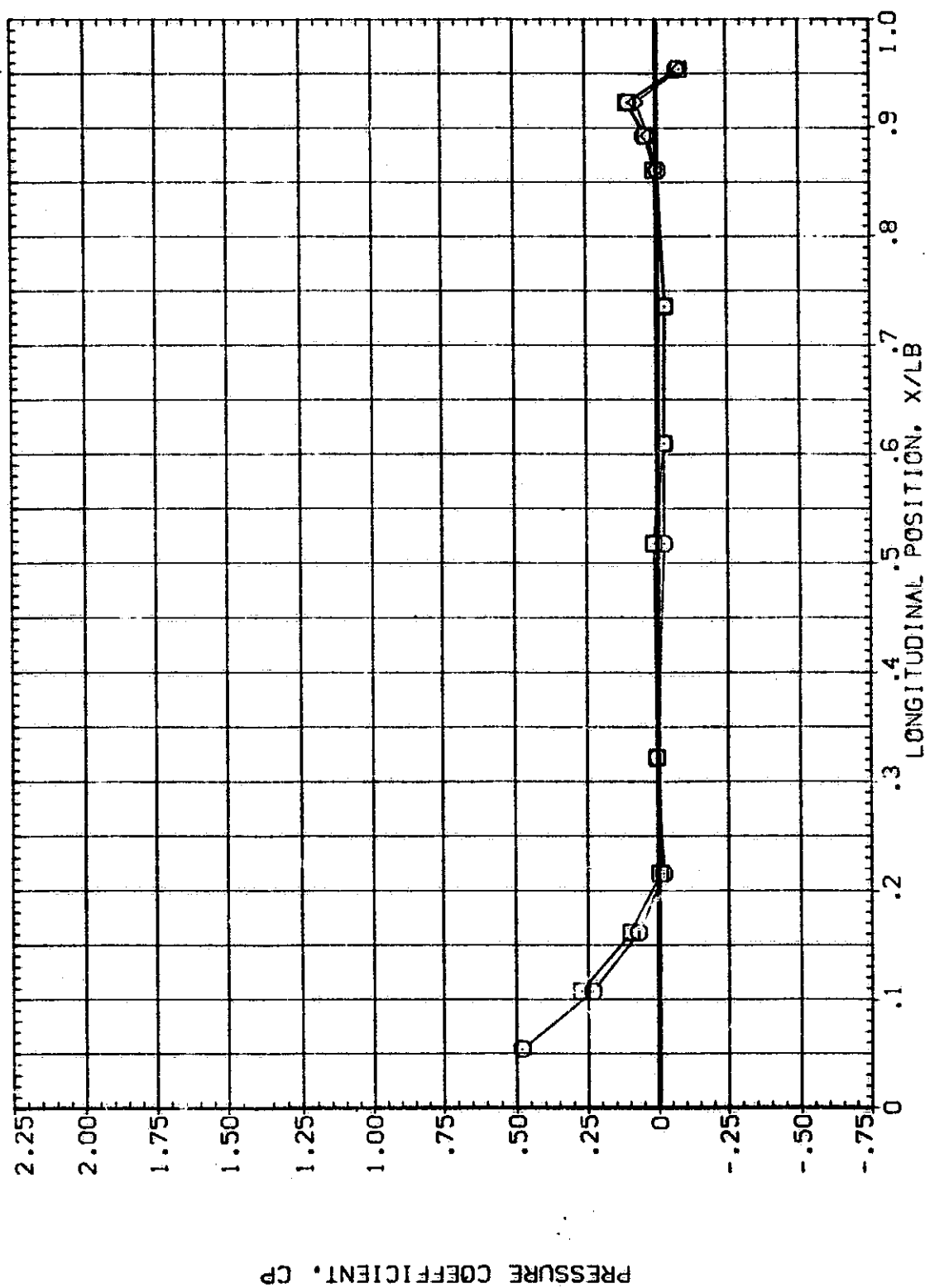


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A055)

SYMBOL  
○  
□  
◇

THETA  
45.000  
67.500  
90.000

ALPHA  
7.800

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
270.000

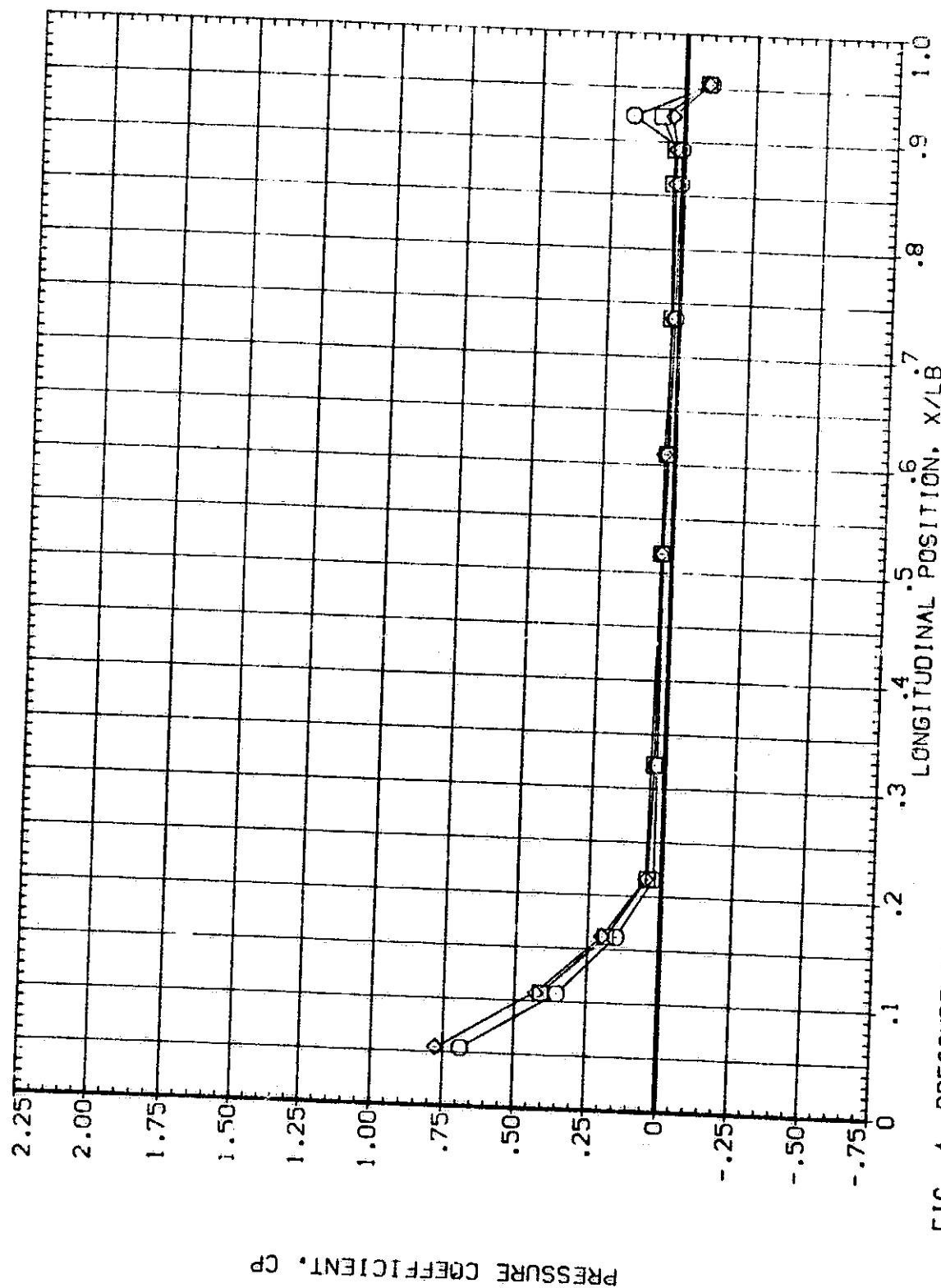


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (P1A055)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	7.800	3.480		.000	.000
□	135.000			1.000		
◇	157.500					270.000

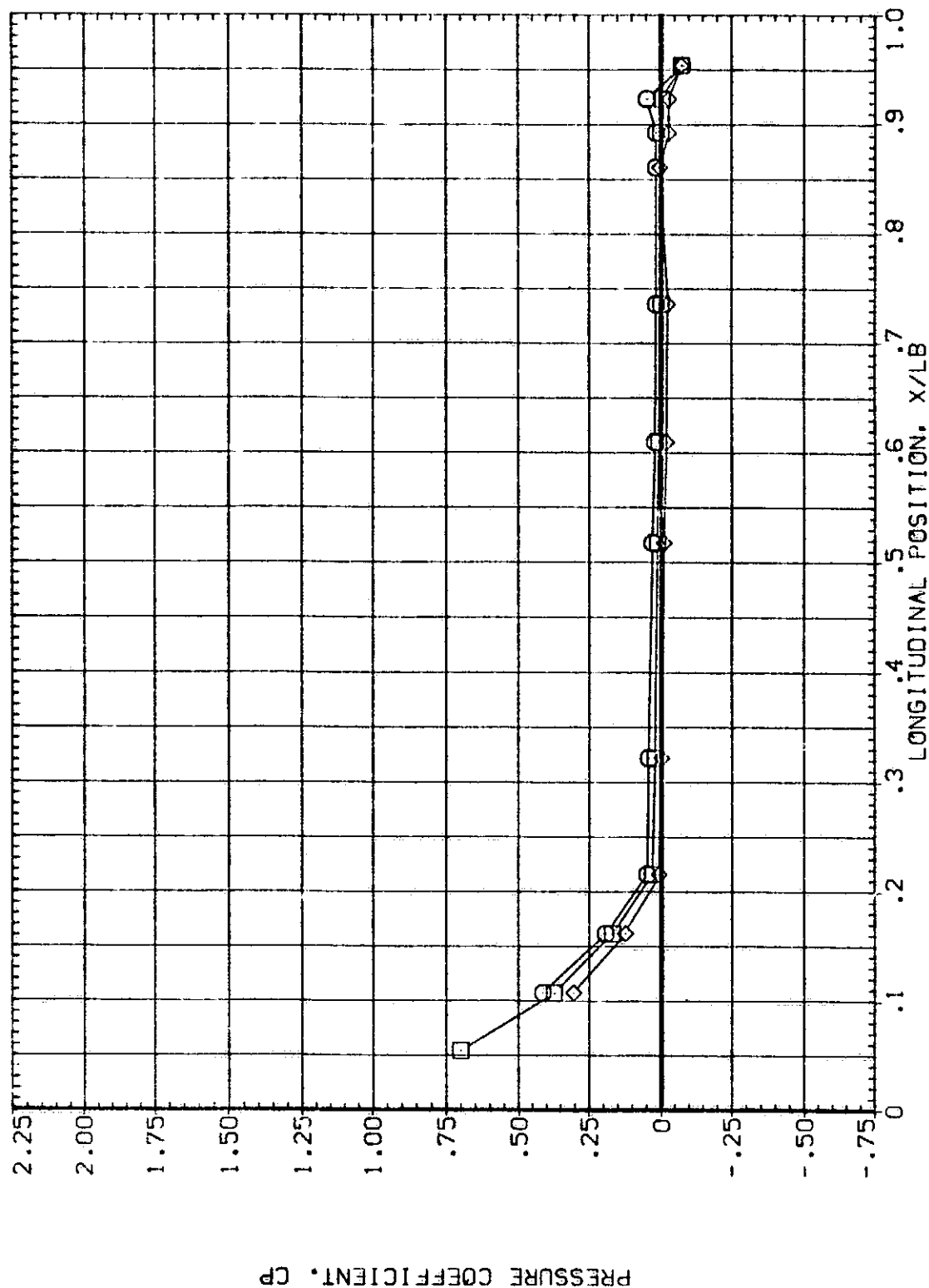


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	180.000	7.800	3.480	MOUNT	.000 OFFSET
□	202.500				1.000 PHI
◇	225.000				270.000

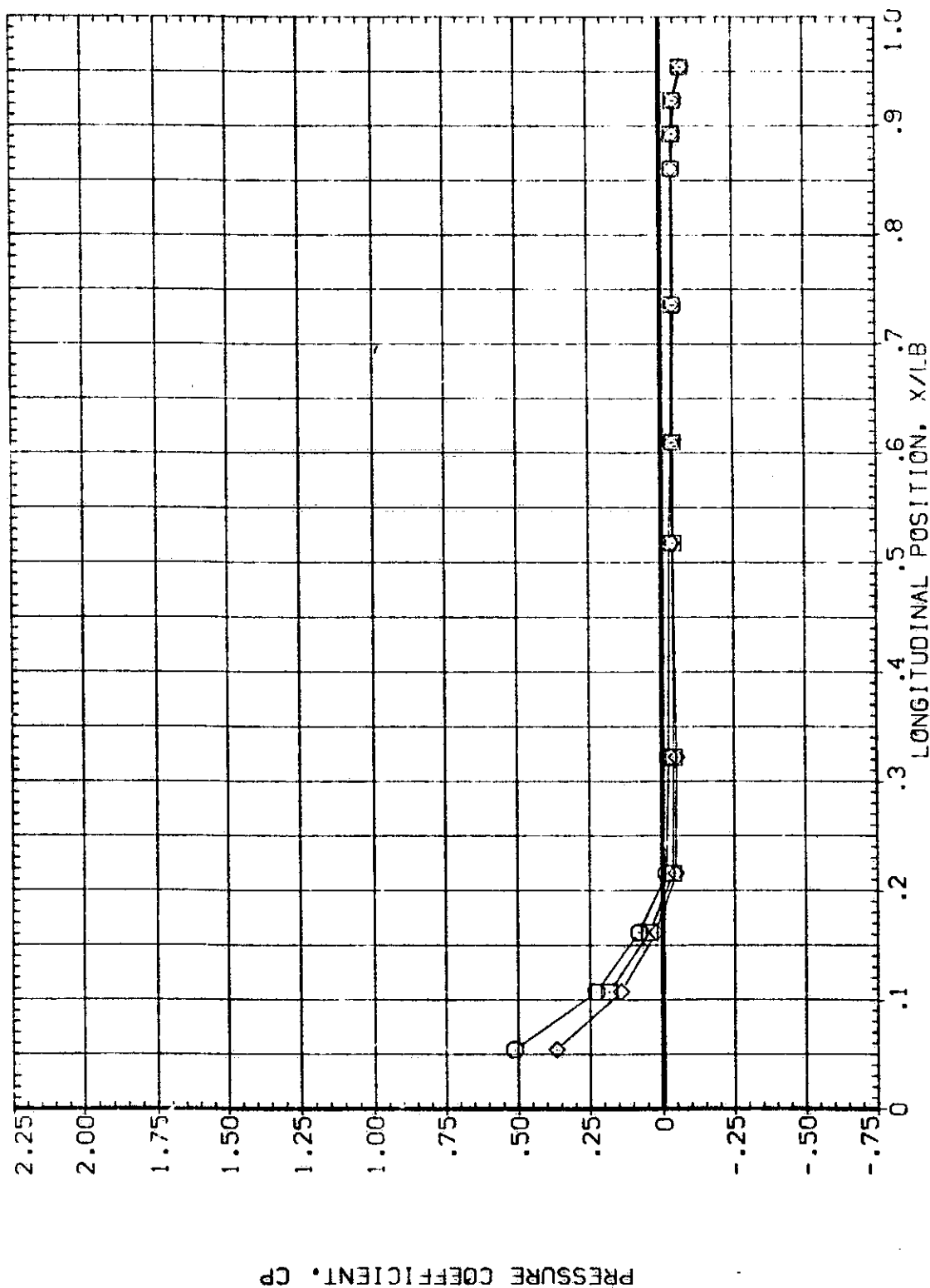


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA055)

SYMBOL THETA ALPHA MACH  
 ○ 247.500 7.800 3.480  
 □ 270.000  
 ◇ 292.500

PARAMETRIC VALUES  
 BETA .000 OFFSET .000  
 MOUNT 1.000 PHI 270.000

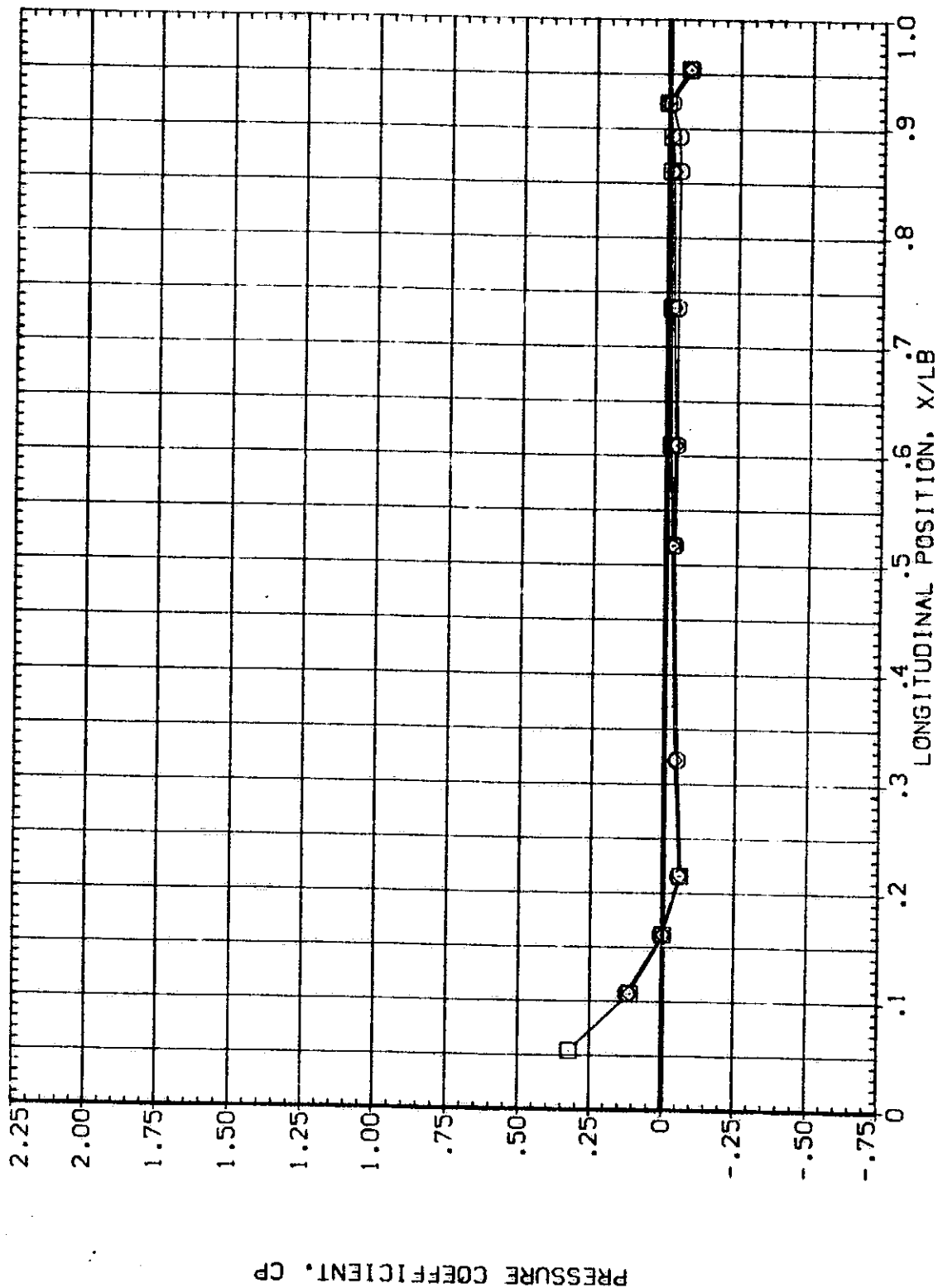


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
□  
◇

THETA  
315.000  
326.000  
346.000

ALPHA  
7.800

MACH  
3.480

PARAMETRIC VALUES  
BETA .000  
MOUNT 1.000  
PHI .000  
270.000

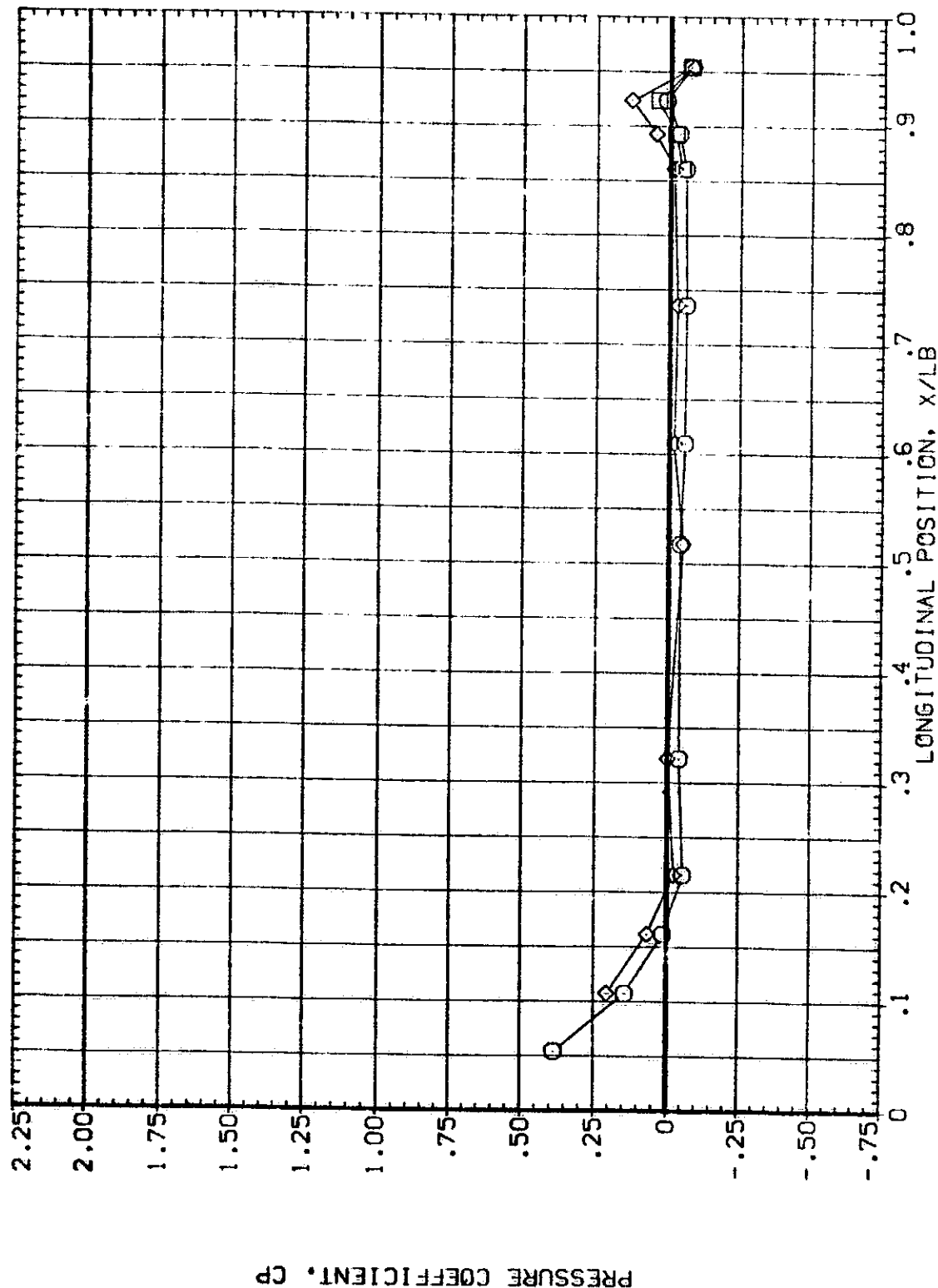


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A056)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES		
	.000	14.000	12.520	12.520	3.480	3.480	BETA	OFFSET	PHI
□							MCUNT	1.000	270.000
◇									

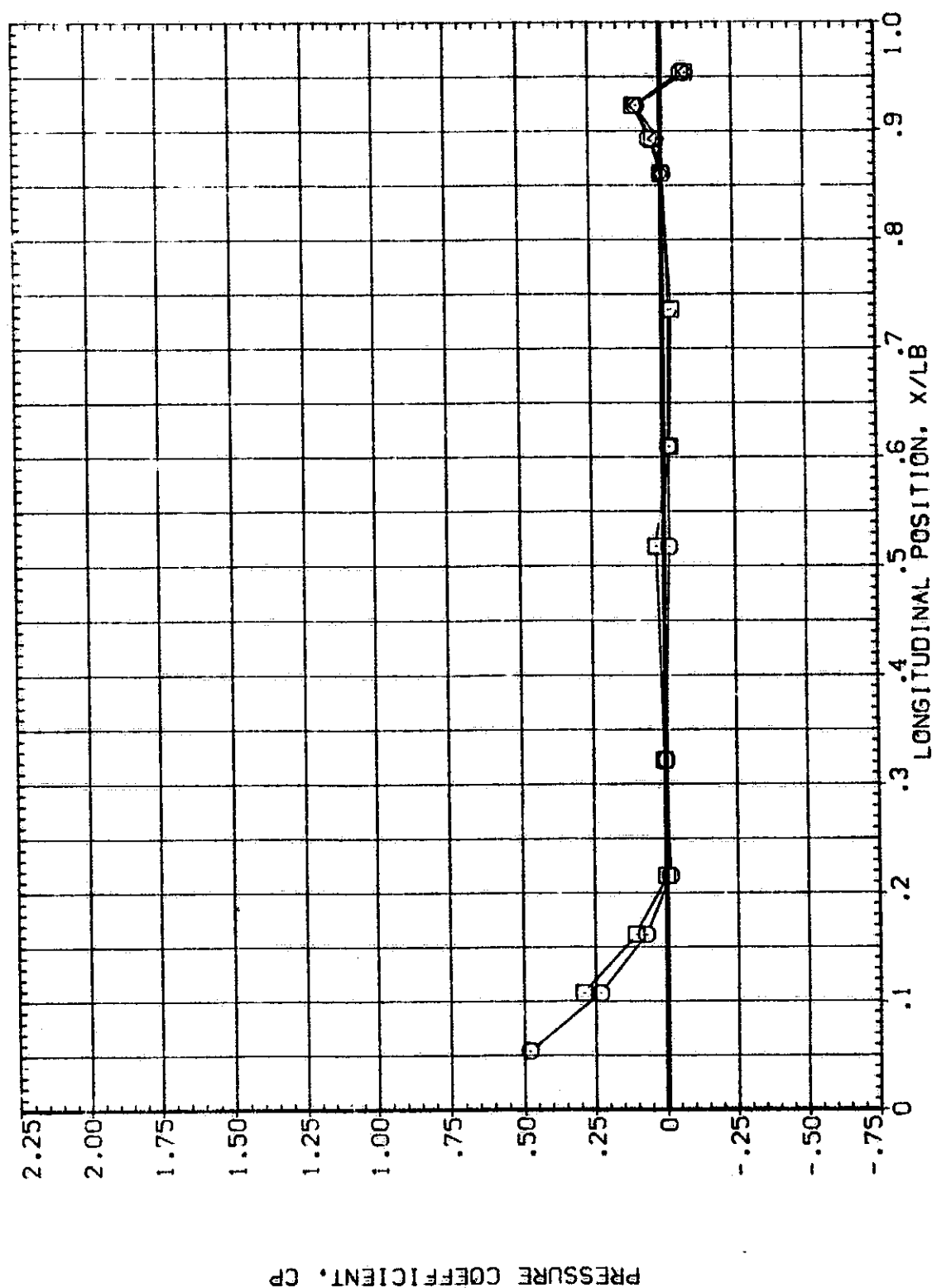


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 12.520

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 OFFSET  
 1.000 PHI

20.000  
 270.000

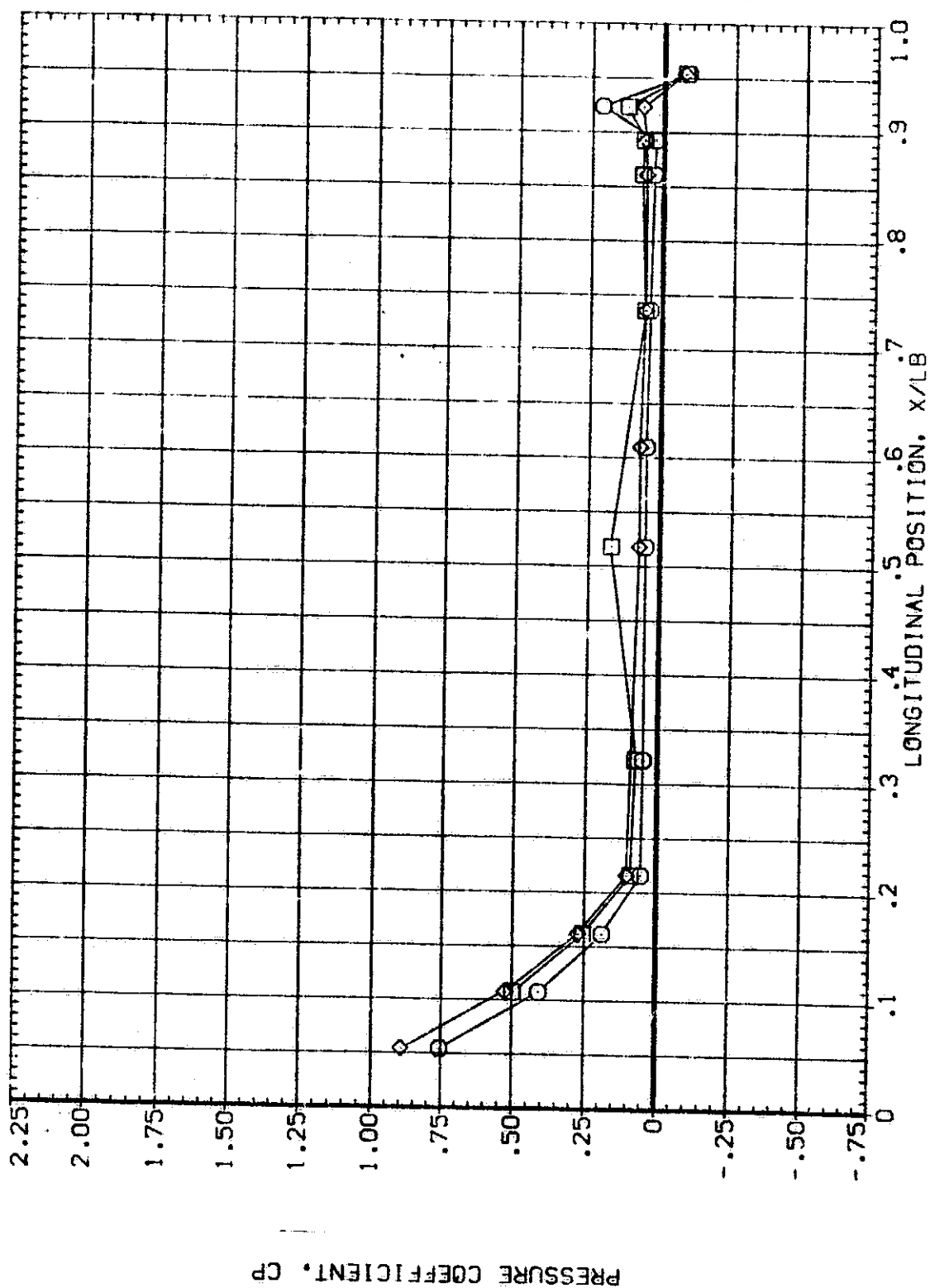


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA056)

SYMBOL    THETA    ALPHA    MACH  
 ○    112.500    12.520    3.480  
 □    135.000  
 ◇    157.500

PARAMETRIC VALUES  
 BETA    DEFJET    20.000  
 MOUNT    1.000    0.41    270.000

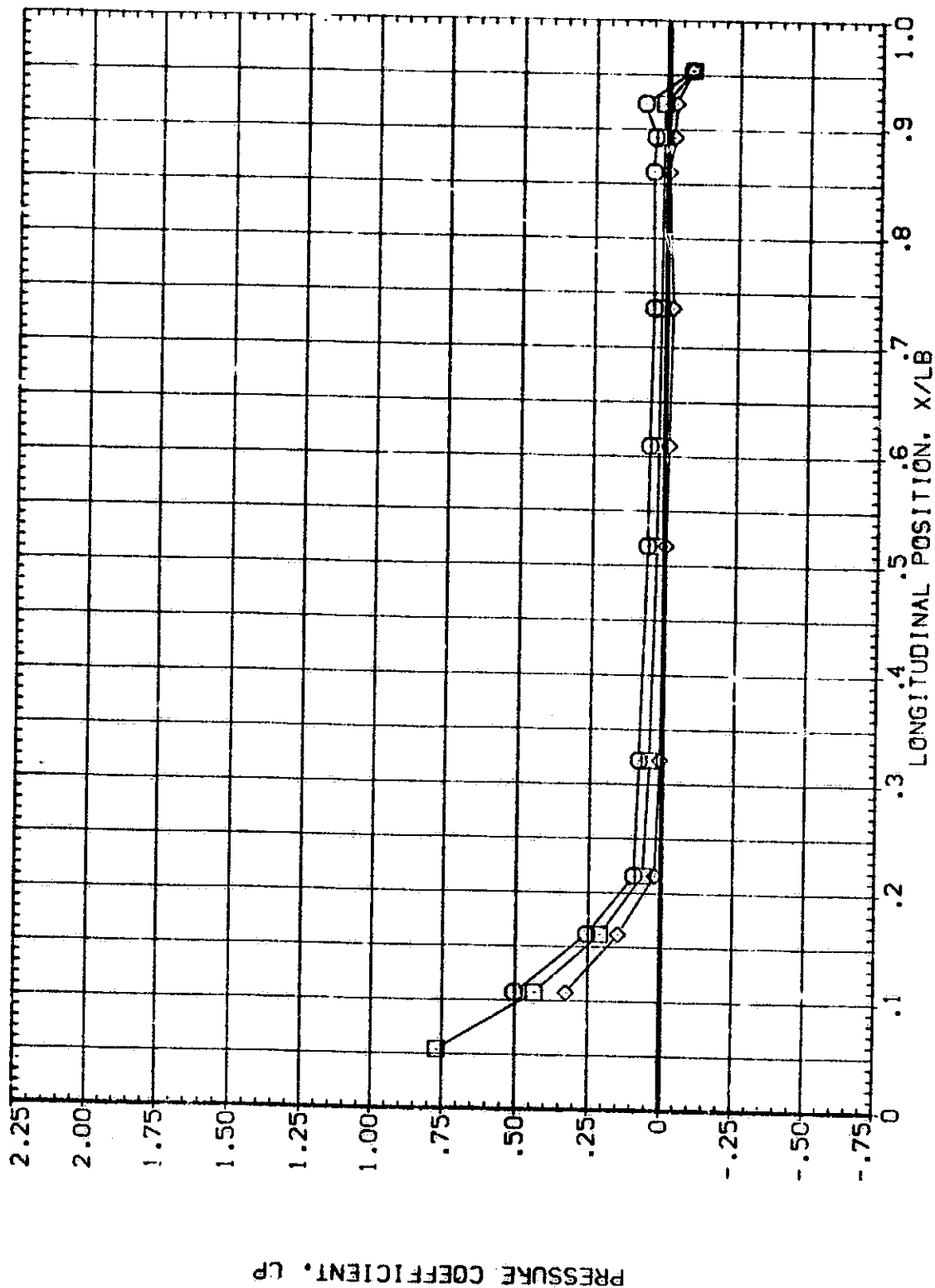


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA056)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 180.000  
 202.500  
 225.000

ALPHA  
 12.520

MACH  
 3.480

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 1.000

BETA  
 20.000  
 270.000

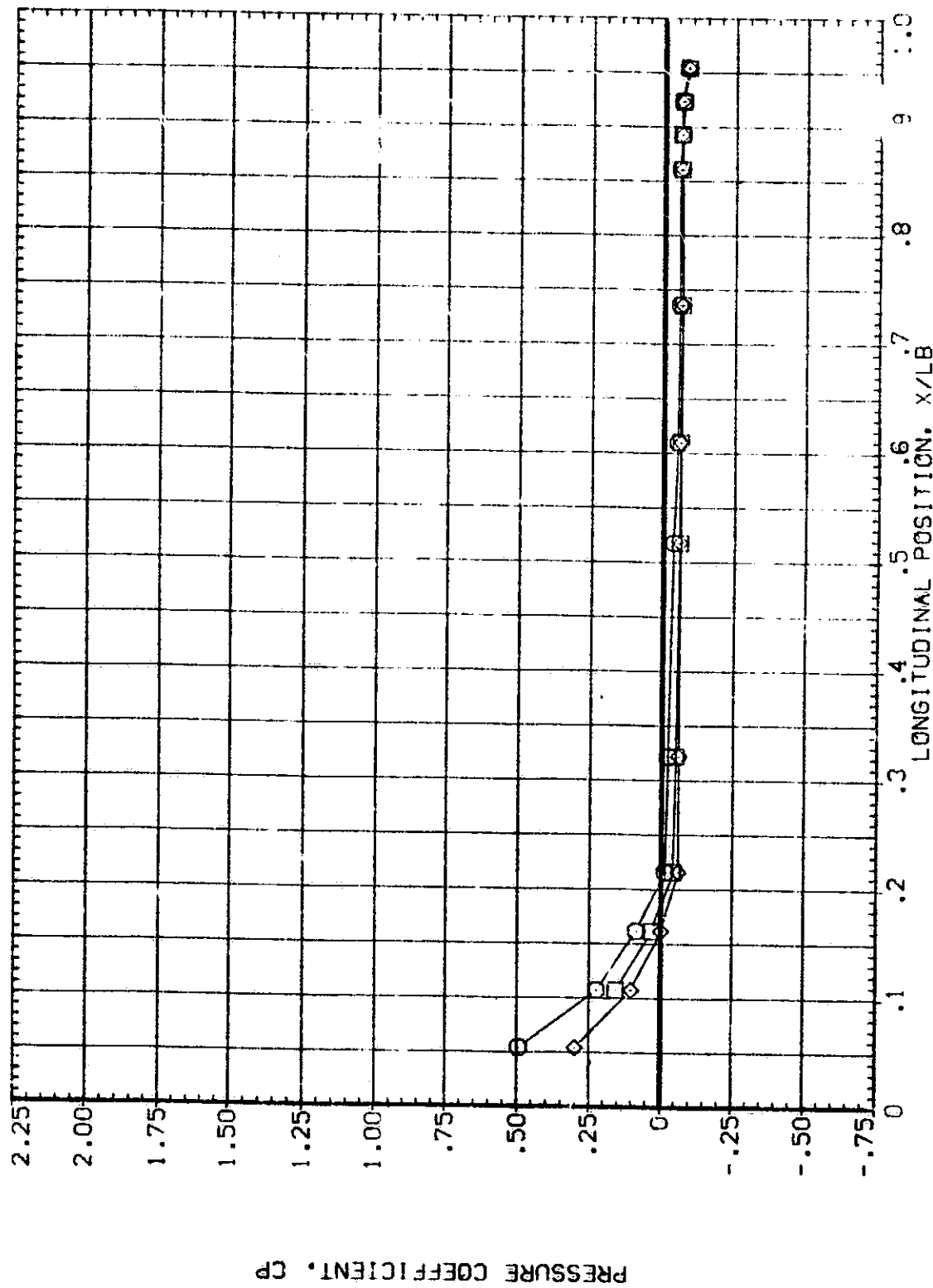


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA056)

SYMBOL

THETA  
247.500  
270.000  
292.500

ALPHA  
12.520

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI

20.000  
270.000

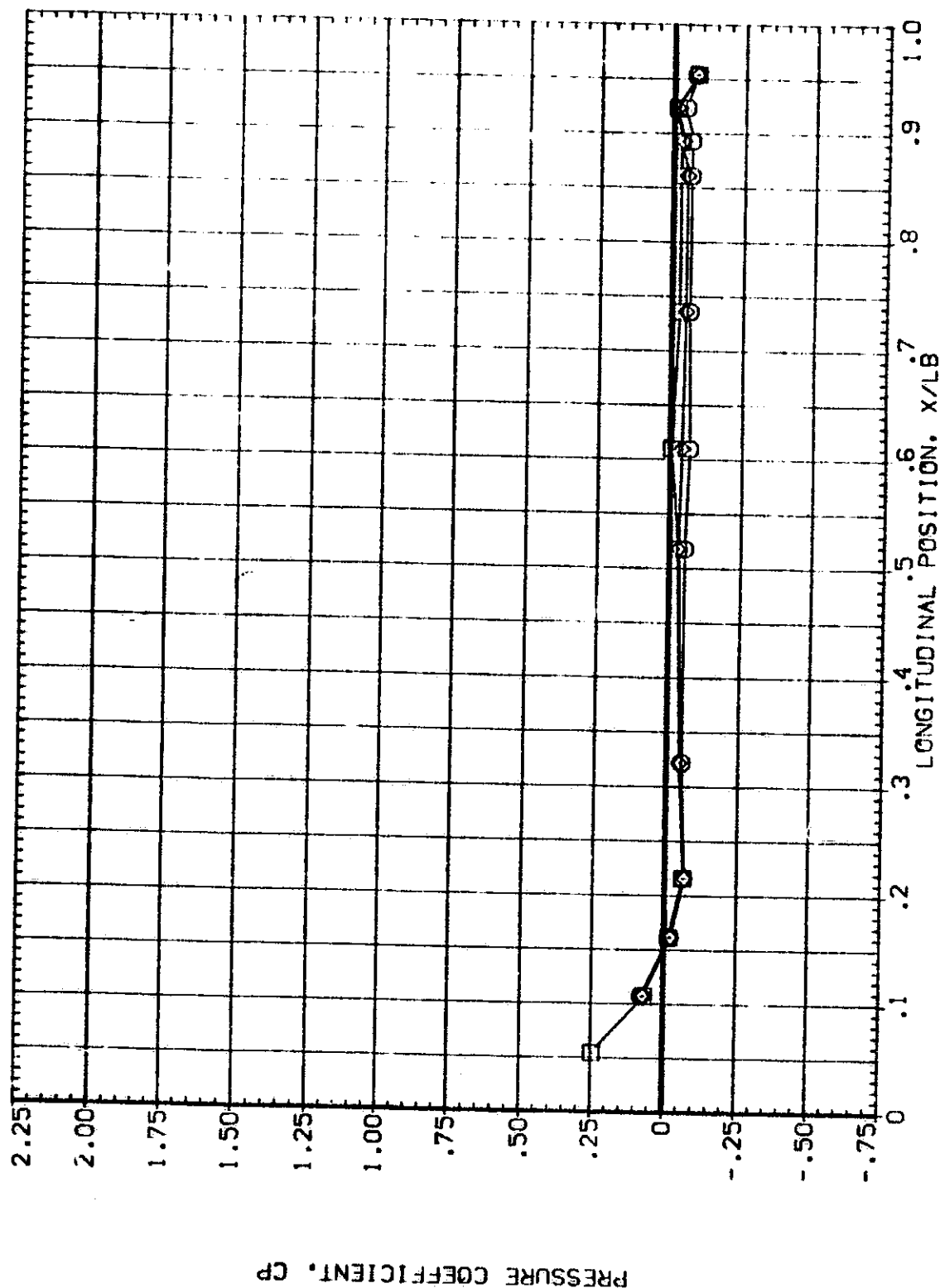


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1

(P1A056)

SYMBOL  
 ○  
 □  
 ◇

THETA	ALPHA	MACH
315.000	12.520	3.480
326.000		
346.000		

PARAMETRIC VALUES		
BETA	OFFSET	PHI
1.000	20.000	270.000

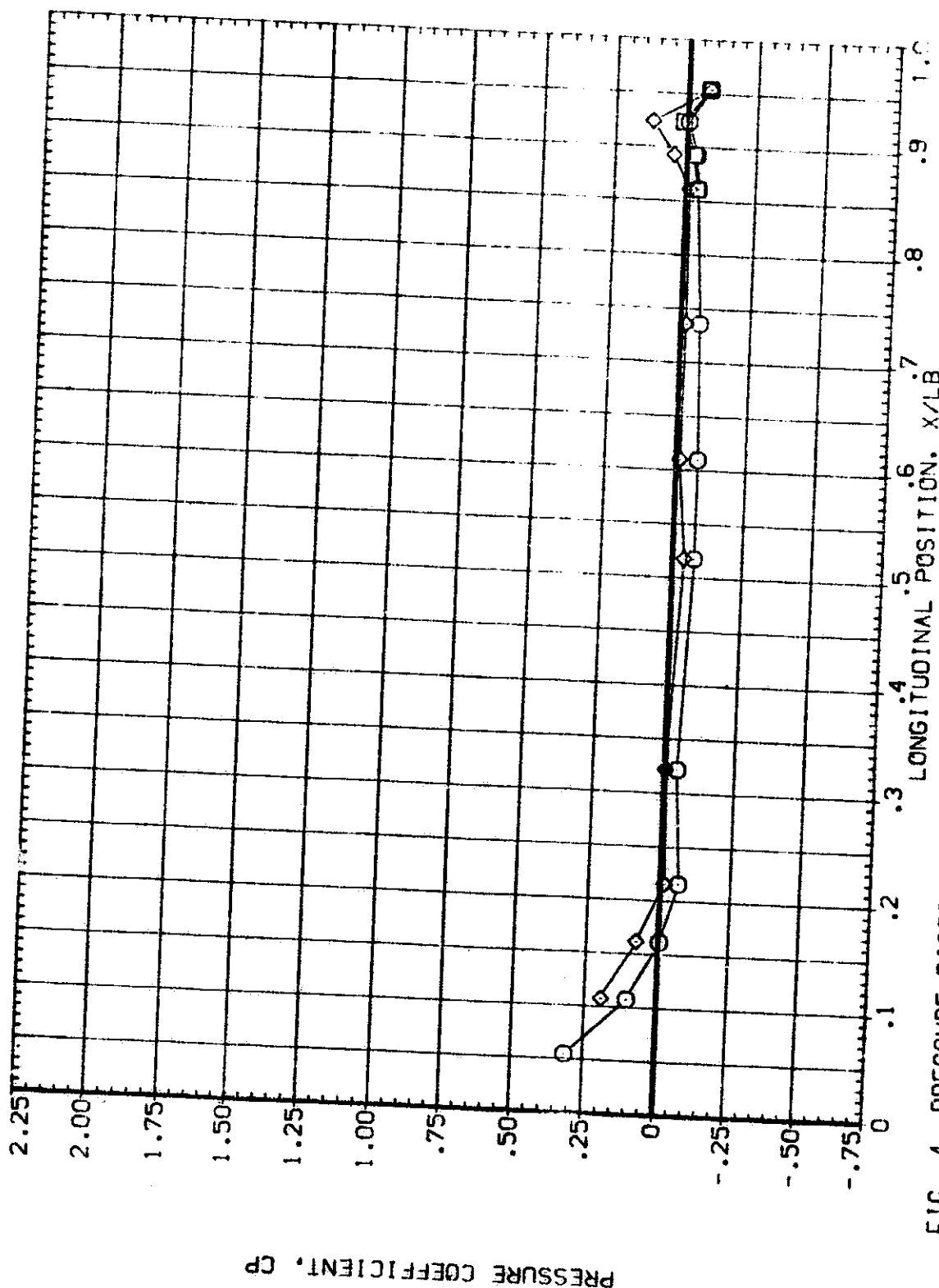


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA057)

SYMBOL  
 THE TA  
 .000  
 14.000  
 24.000

ALPHA  
 16.540  
 MACH  
 3.480

PARAMETRIC VALUES  
 BETA  
 MOUNT  
 .000  
 1.000  
 20.000  
 270.000  
 OFFSET  
 PHI

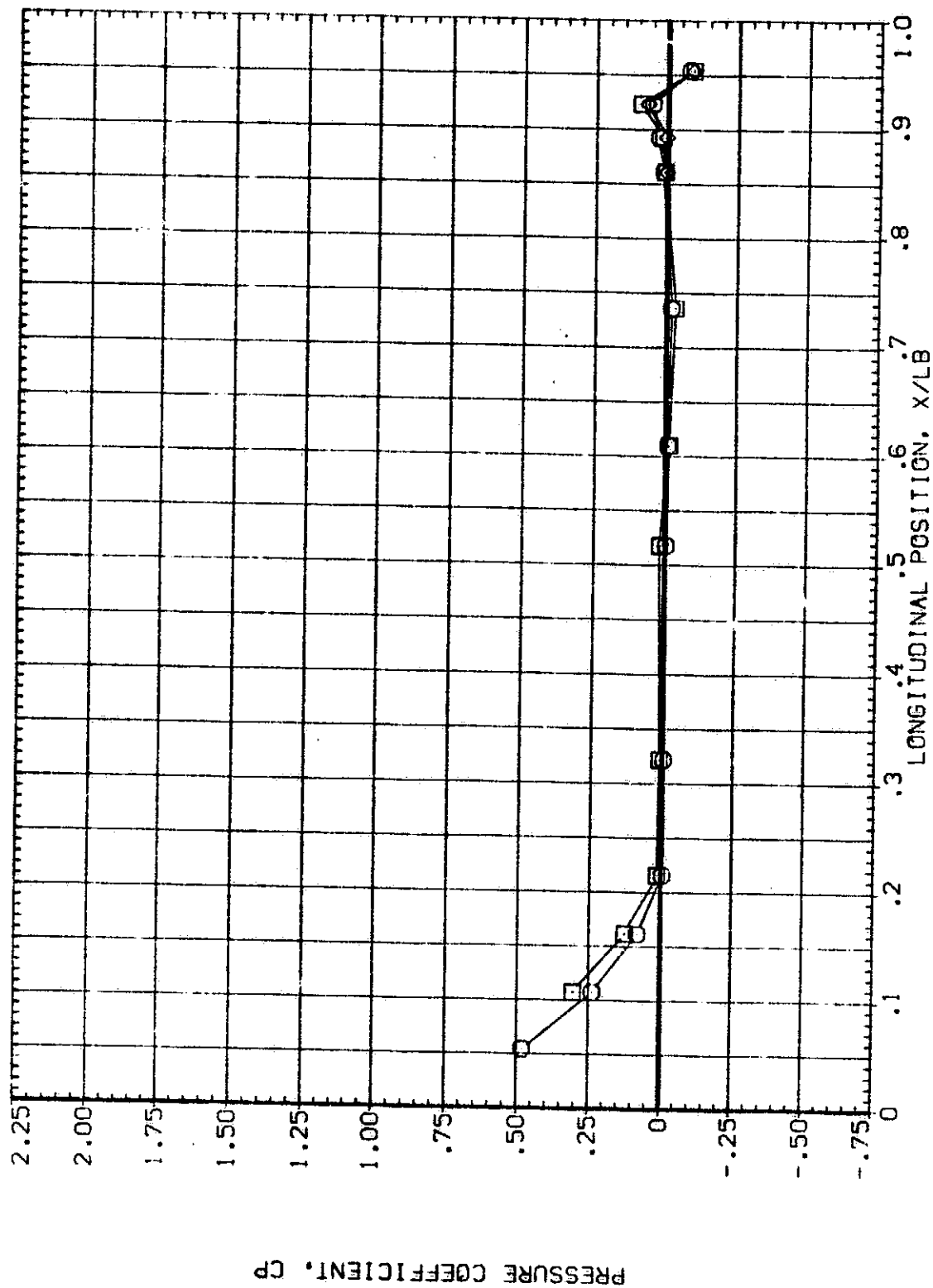


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 16.540

MACH  
 3.480

PARAMETRIC VALUES  
 .000  
 .000  
 1.000

BETA  
 MOUNT

20.000  
 270.000

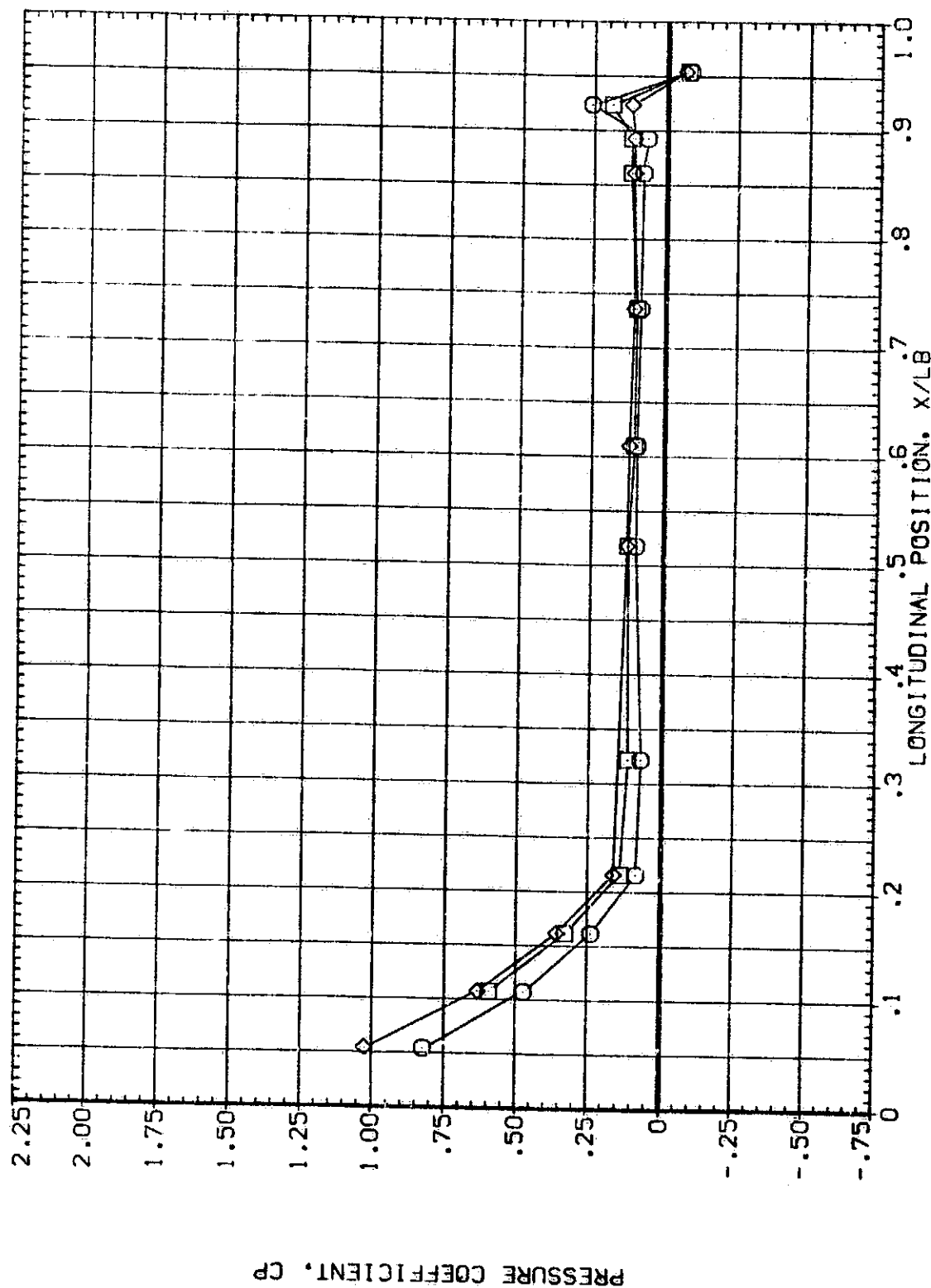


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A057)

SYMBOL THETA ALPHA MACH  
 O 112.500 16.540 3.480  
 □ 135.000  
 ◇ 157.50°

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI 270.000

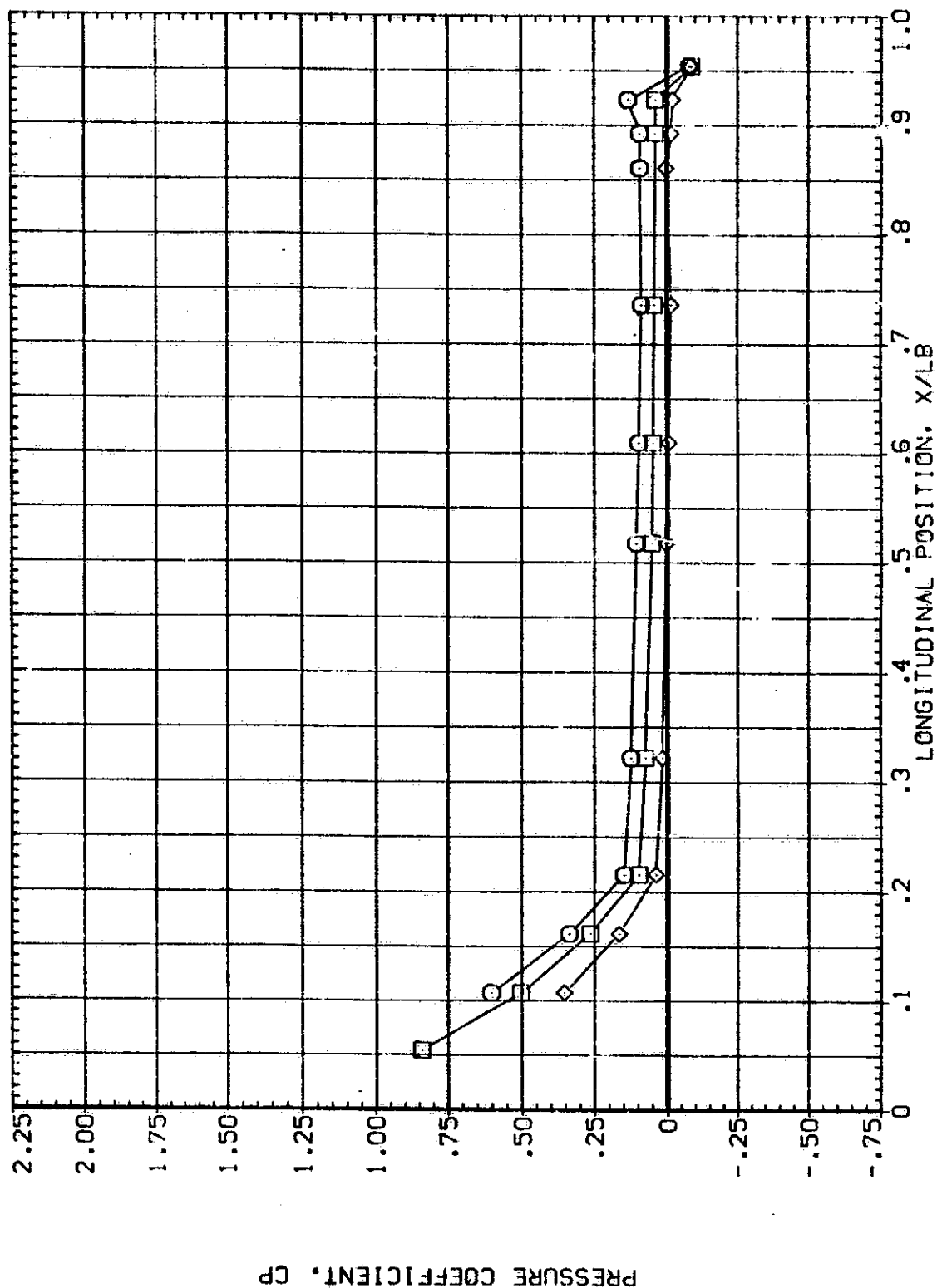


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	180.000	16.540	3.480	MOUNT	.000 OFFSET 20.000
□	202.500				1.000 PHI 270.000
◇	225.000				

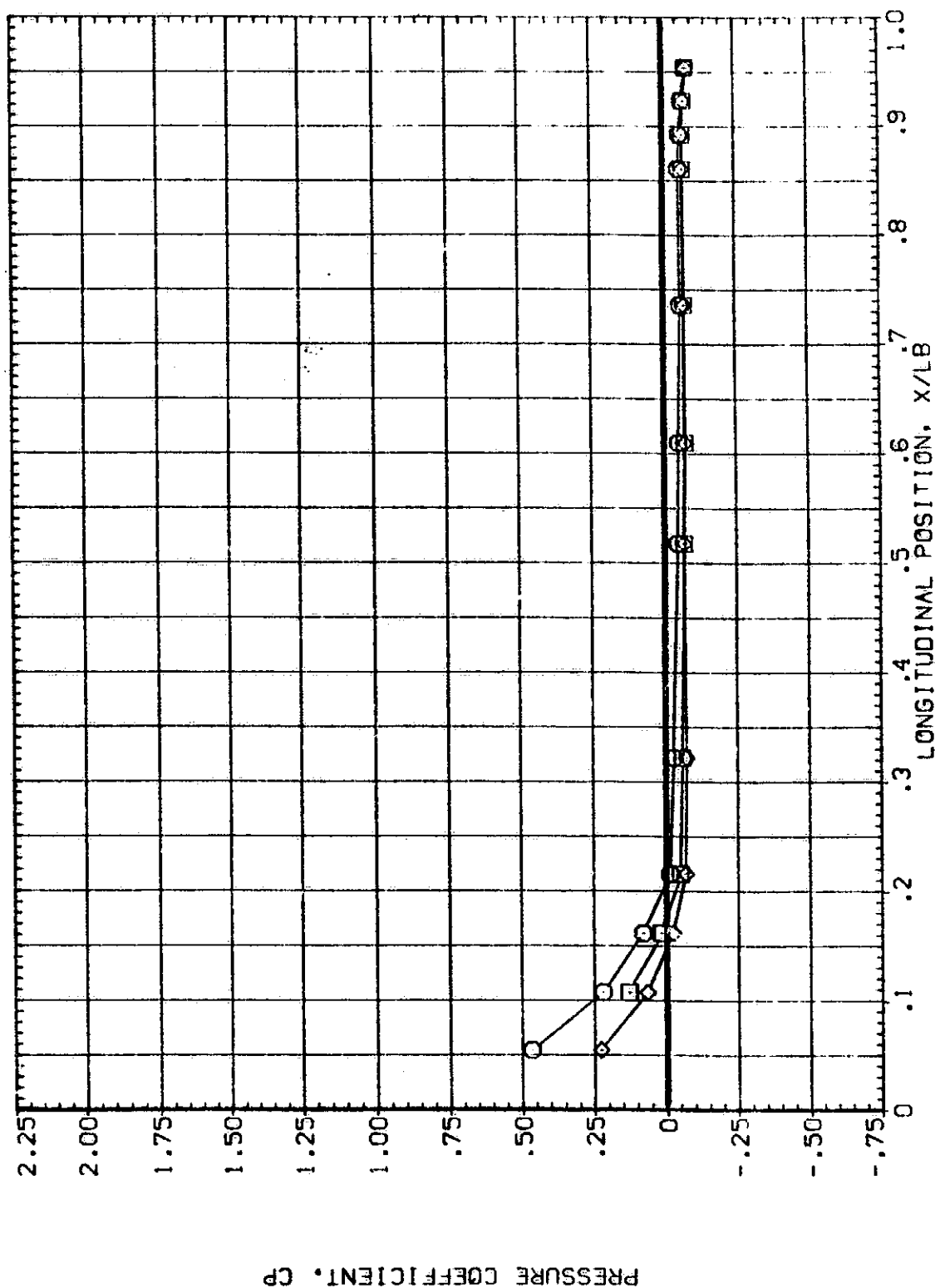


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A057)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	16.540	3.480	MOUNT	.000	20.000
□	270.000				1.000	270.000
◇	292.500					

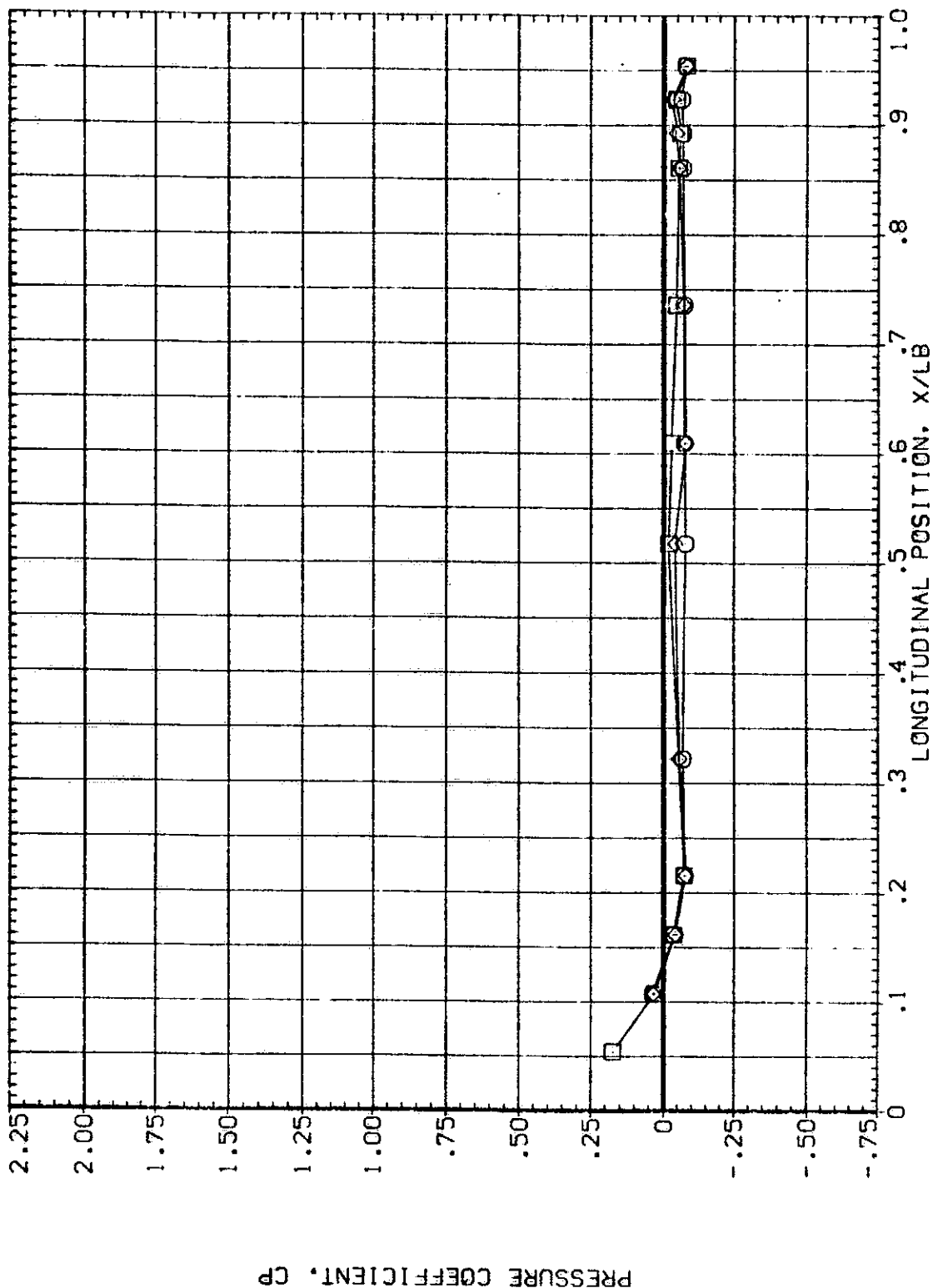


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCTION OF THIS  
ORIGINAL PAGE IS POOR



SYMBOL  
 ○  
 □  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 16.540

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000

OFFSET  
 PHI  
 20.000  
 270.000

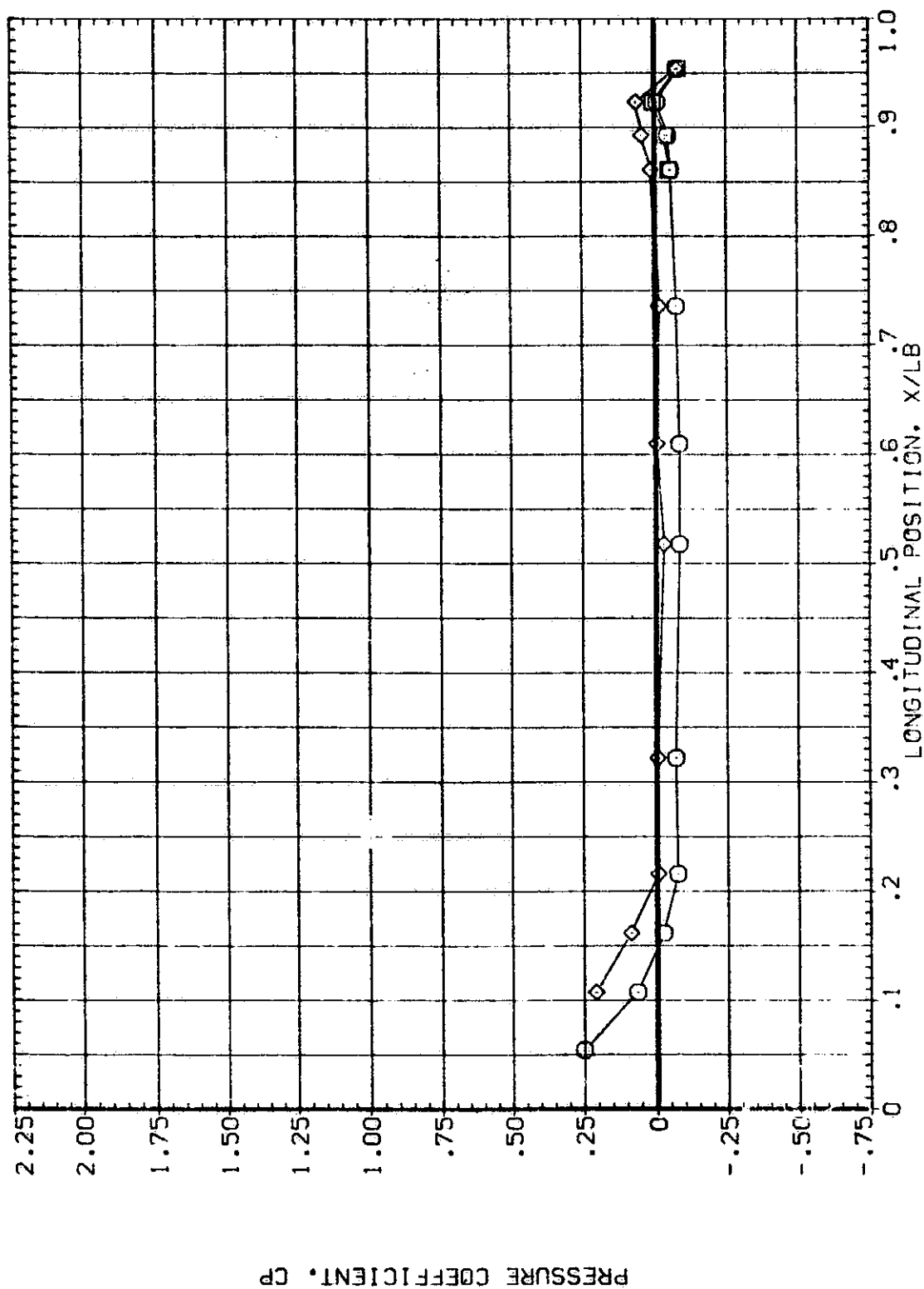


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A058)

SYMBOL  
 ○ □ ◇

THETA .000  
 14.000  
 24.000

ALPHA 20.610

MACH 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 1.000  
 OFFSET PHI  
 20.000 270.000

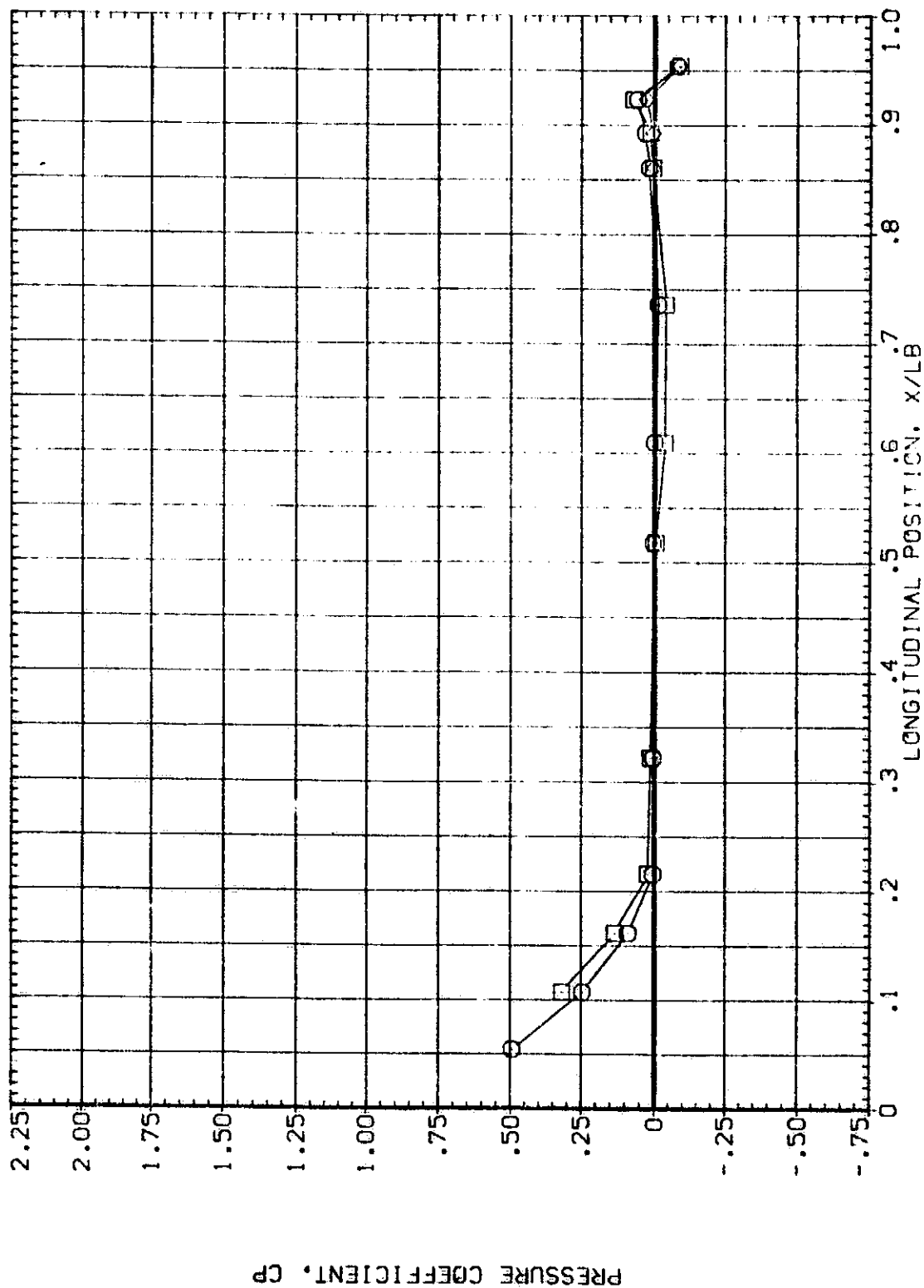


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA- ) MCR0200 EXTERNAL TANK. T1 (PIA058)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 20.610

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 OFFSET  
 1.000 PHI

20.000  
 270.000

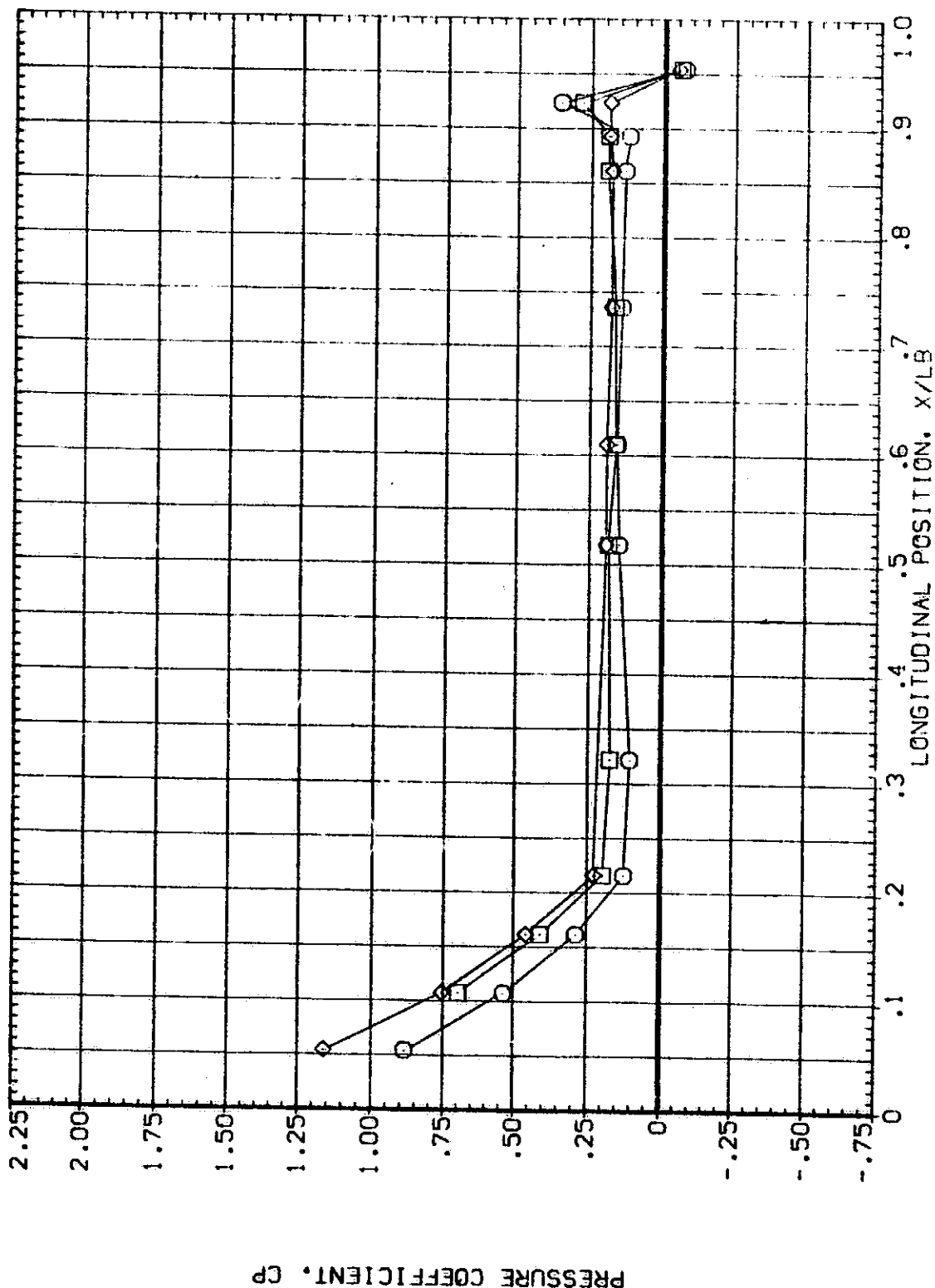


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A058)

SYMBOL

THETA  
112.500  
135.000  
157.500

ALPHA  
20.610

MACH  
3.480

PARAMETRIC VALUES  
.000 OFFSET  
1.000 PHI

BETA  
MOUNT

20.000  
270.000

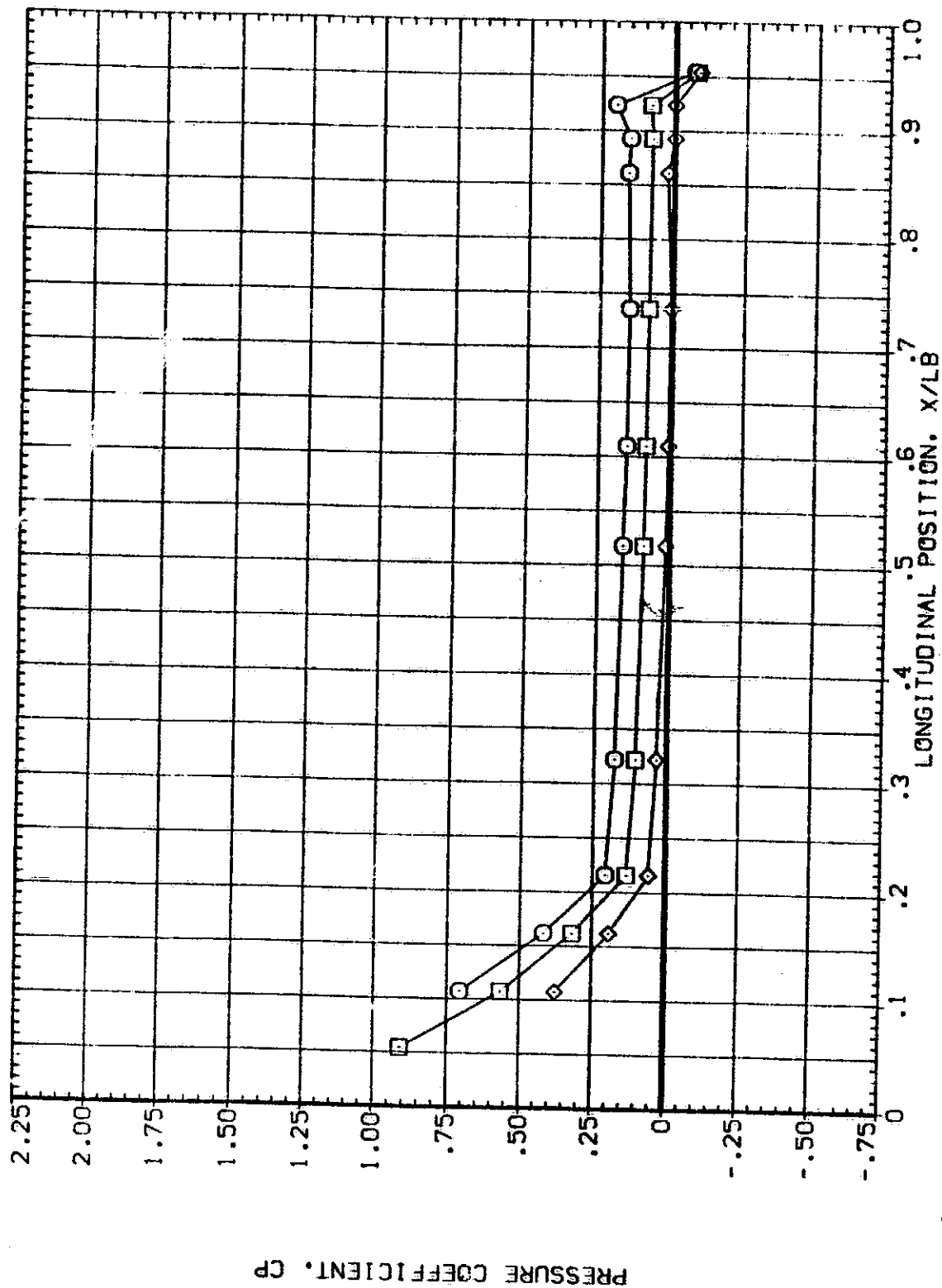


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 BETA .000  
 HOUNT 1.000  
 OFFSET PHI  
 20.000  
 270.000

ALPHA MACH  
 20.610 3.480

THETA  
 180.000  
 202.500  
 225.000

SYMBOL  
 ○  
 □  
 ◇

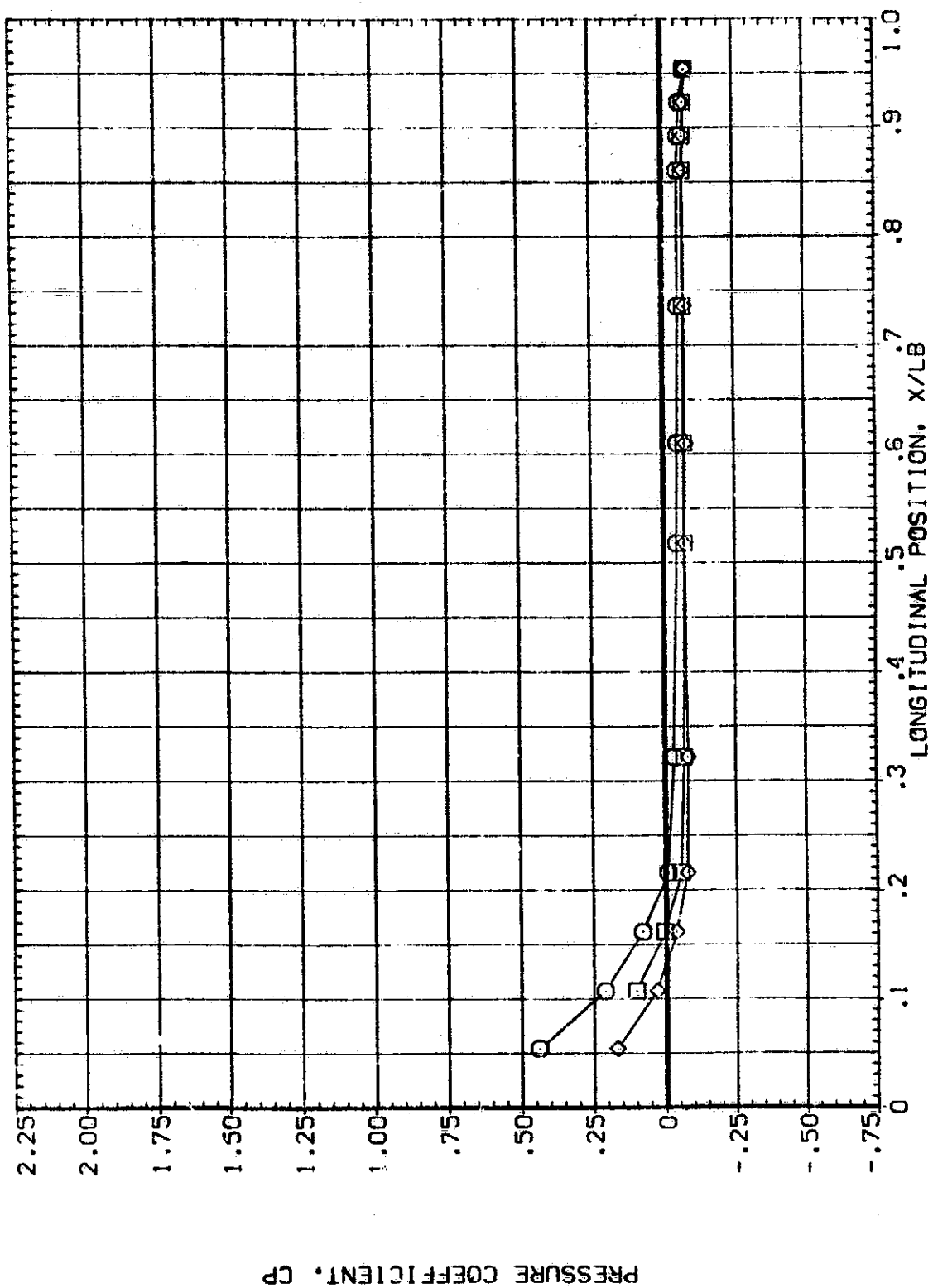


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA058)

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 270.000

BETA  
 MOUNT

SYMBOL THETA ALPHA MACH  
 247.500 20.610 3.480  
 270.000  
 292.500

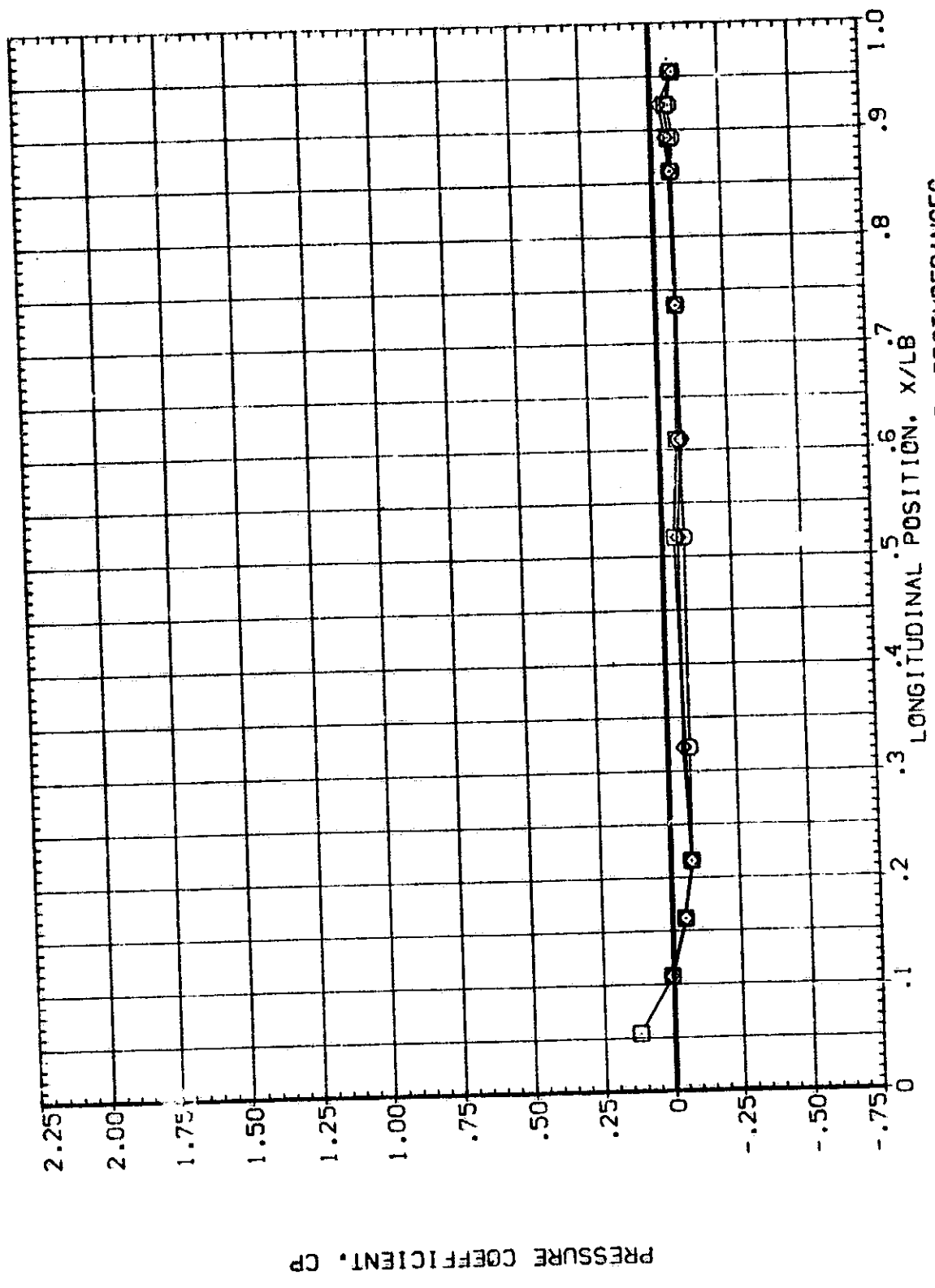


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
□  
□  
◇

THETA  
315.000  
326.000  
346.000

ALPHA  
20.610

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT

OFFSET  
1.000

PHI  
20.000  
270.000

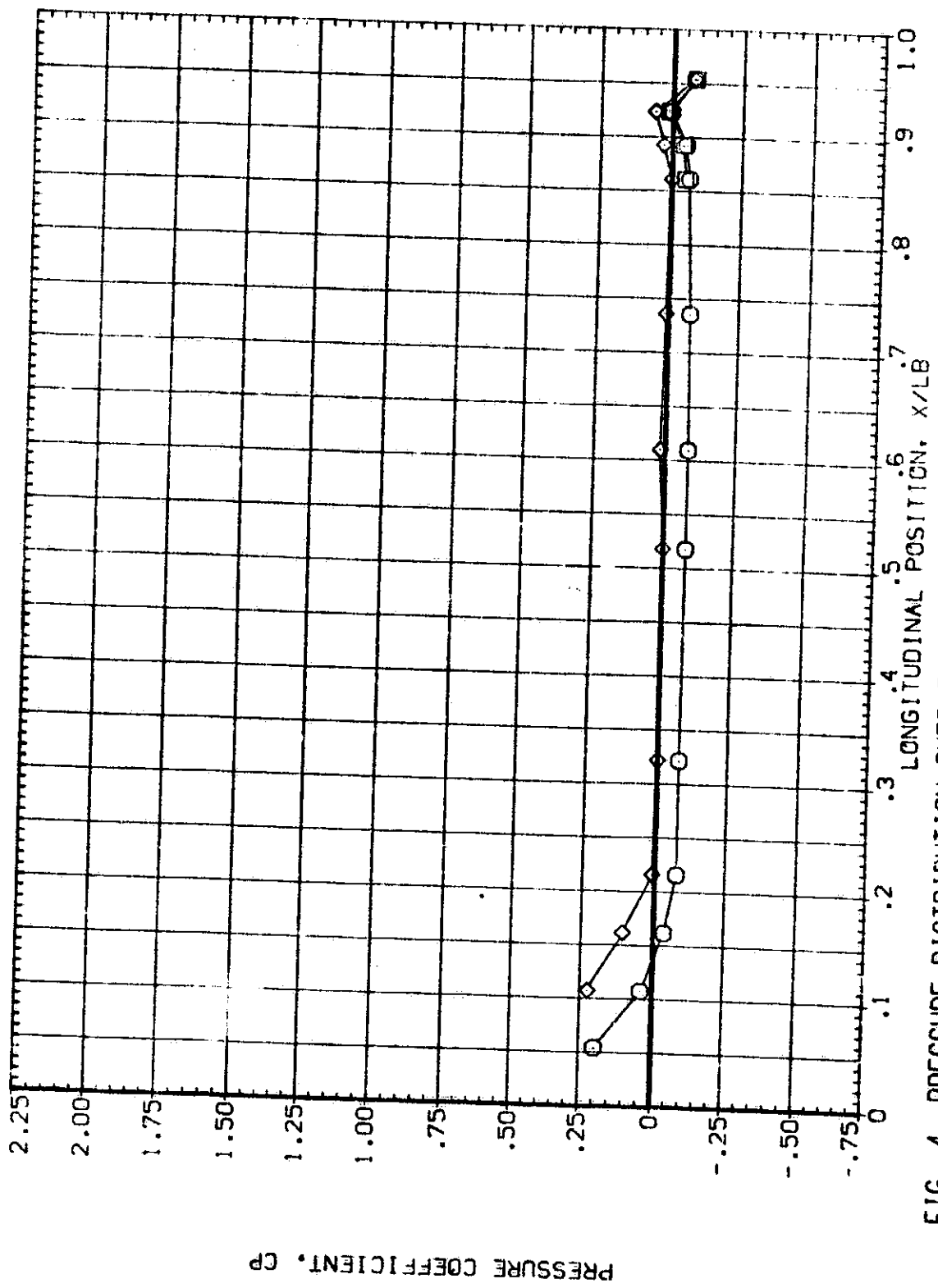


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A059)

SYMBOL THETA  
 ○ .000  
 □ 14.000  
 ◇ 24.000

ALPHA MACH  
 24.680 3.480

BETA MOUNT  
 .000 1.000  
 OFFSET PHI 20.000 270.000

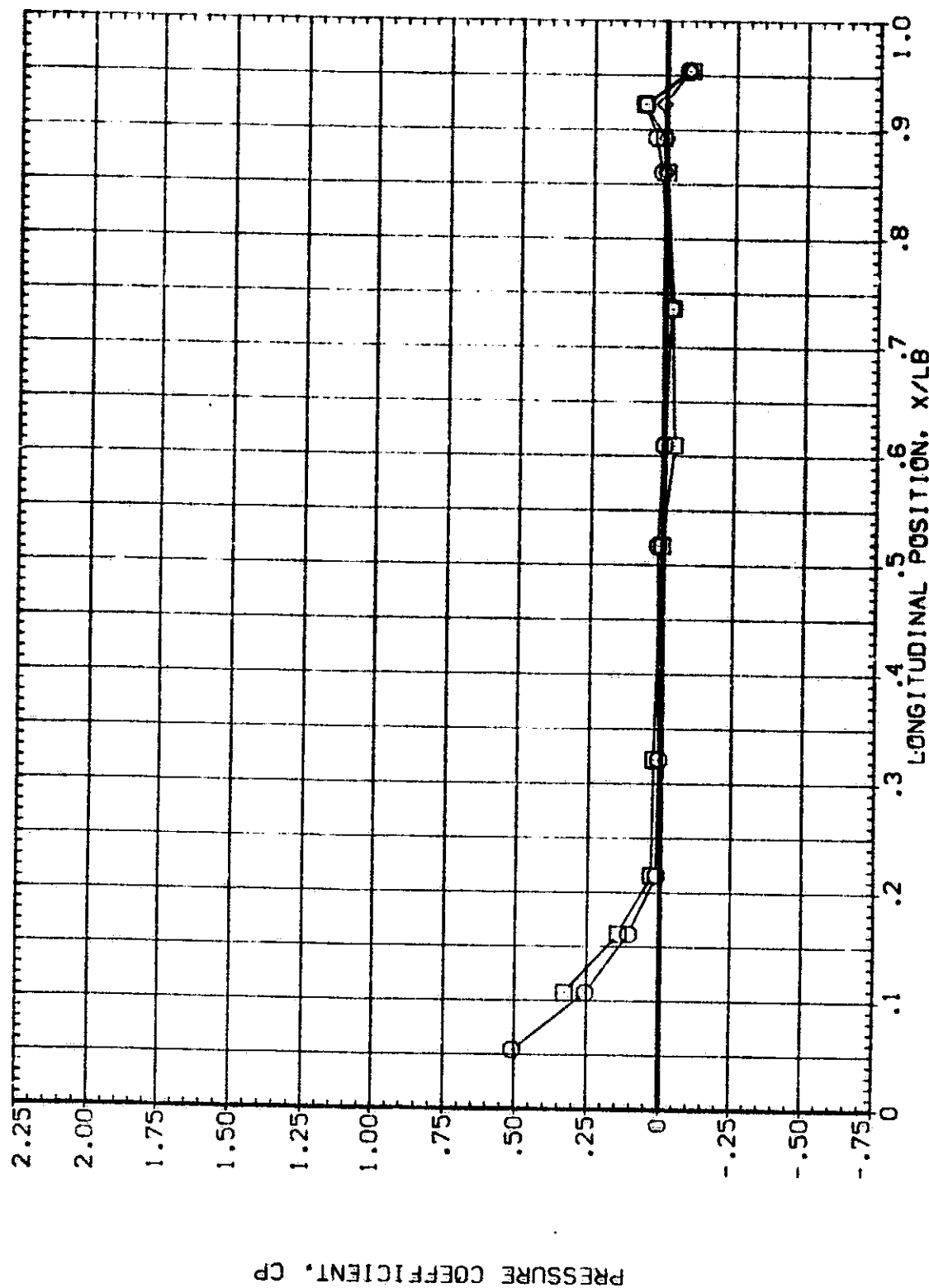


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 24.680

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 PH1

20.000  
 270.000

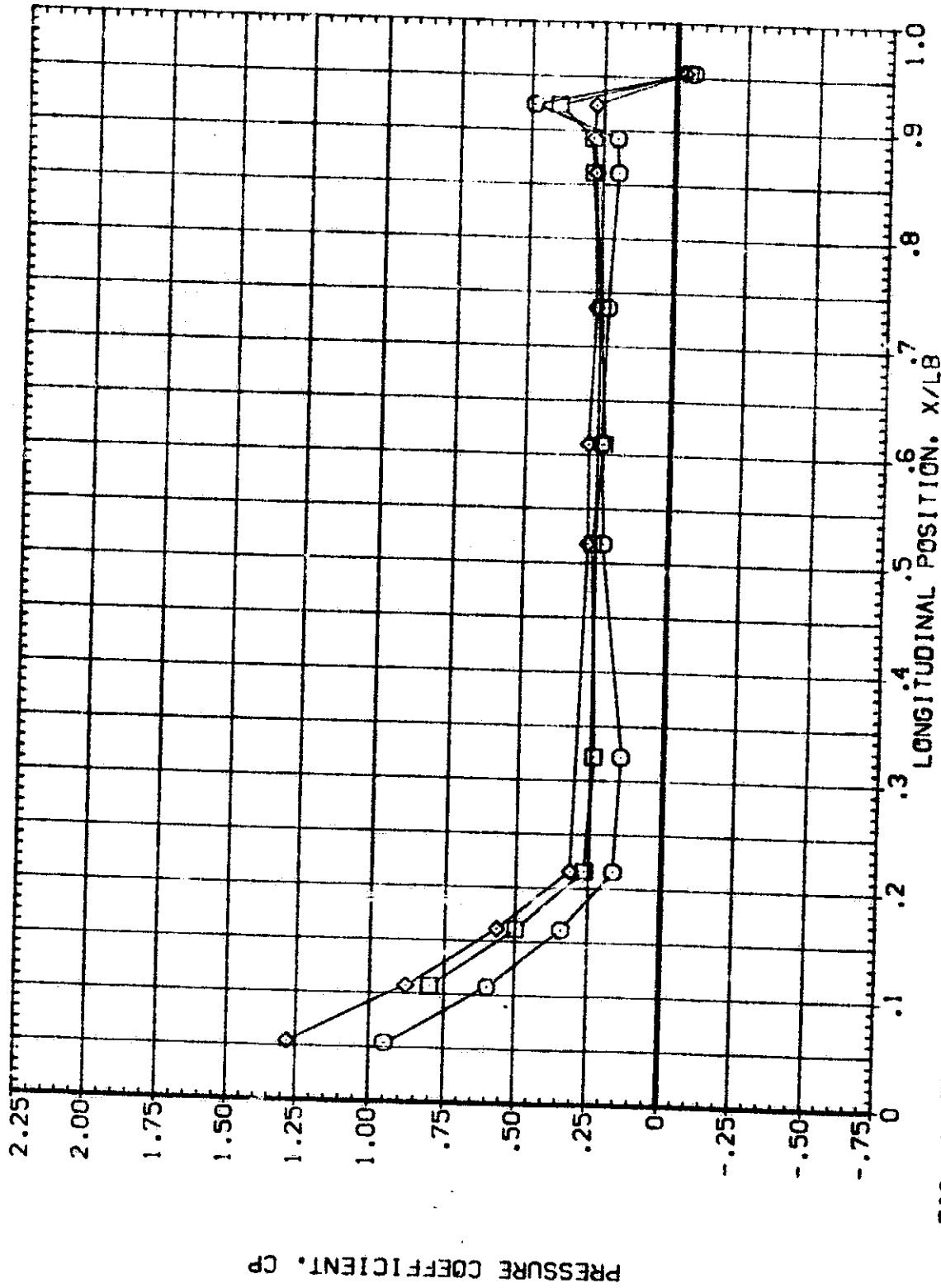


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA059)

SYMBOL THETA ALPHA MACH  
 O 112.500 24.680 3.480  
 □ 135.000  
 ◇ 157.500

PARAMETRIC VALUES  
 BETA .000  
 HOUNT 1.000  
 OFFSET PHI 20.000  
 270.000

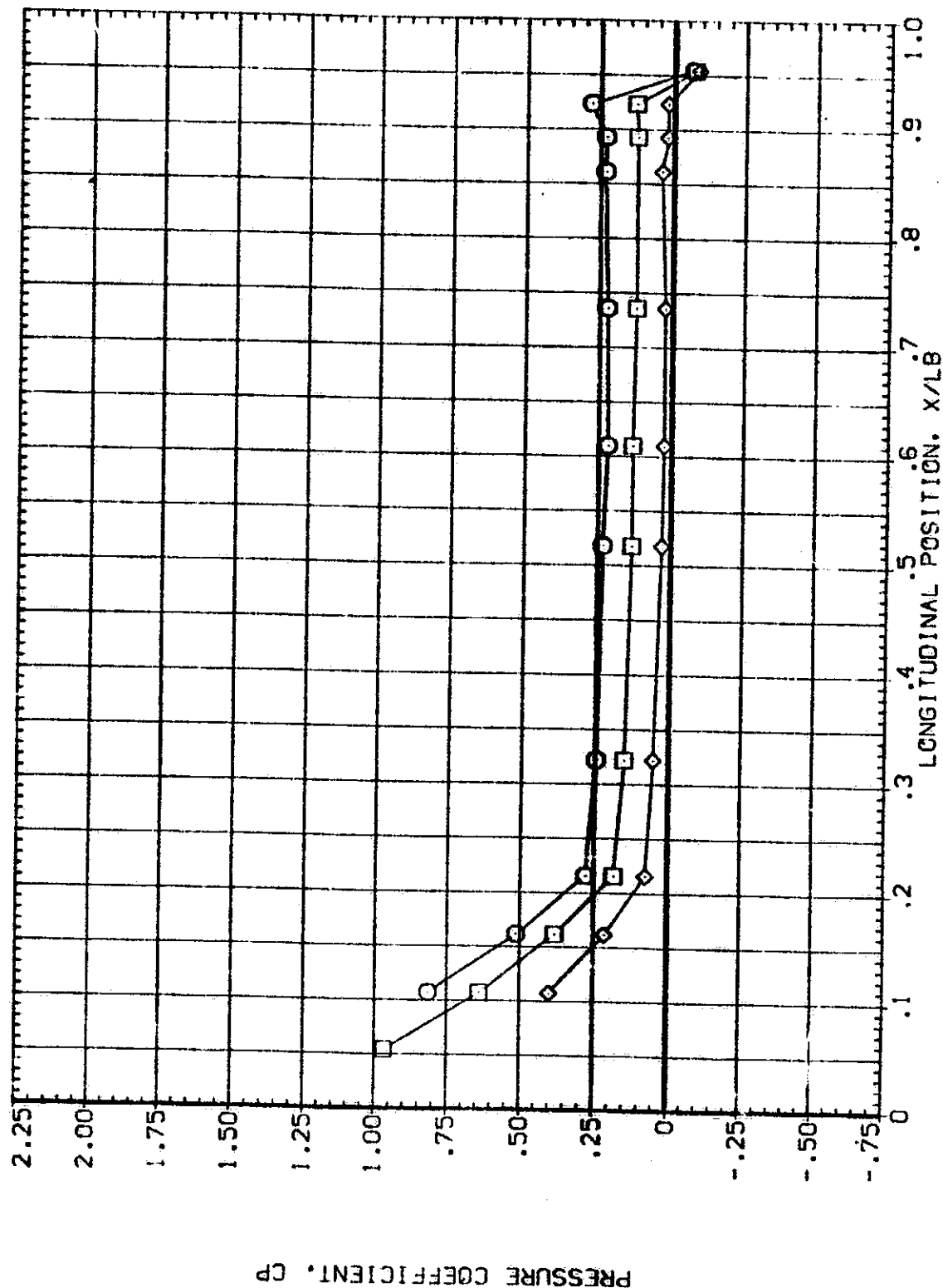


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A059)

SYMBOL

THETA  
190.000  
202.500  
225.000

ALPHA  
24.680

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

1.000  
20.000

PHI  
270.000

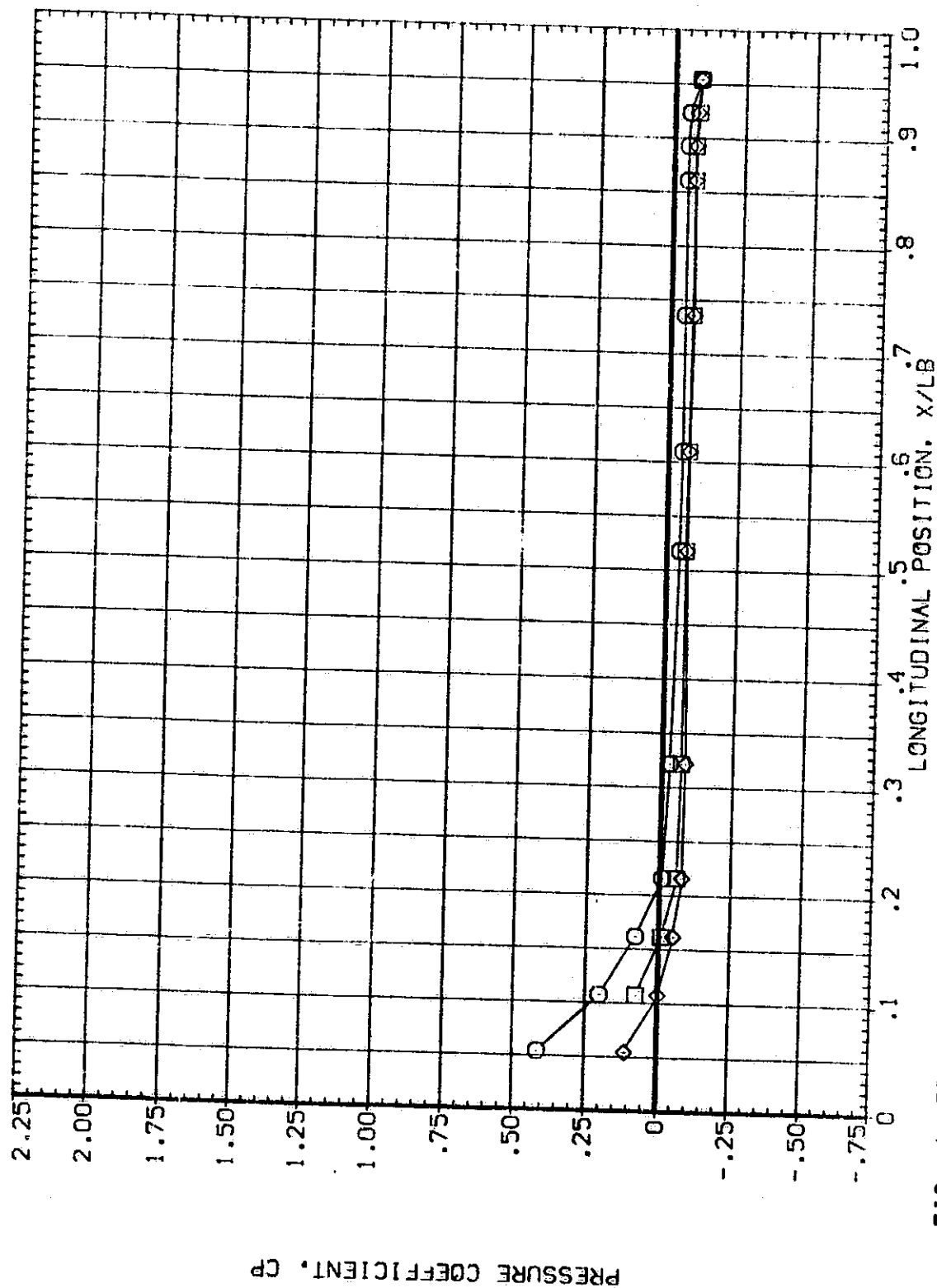


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A059)

SYM:OL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	247.500	24.680	3.490	1.000	.000	20.000
◇	270.000					270.000
◇	292.500					

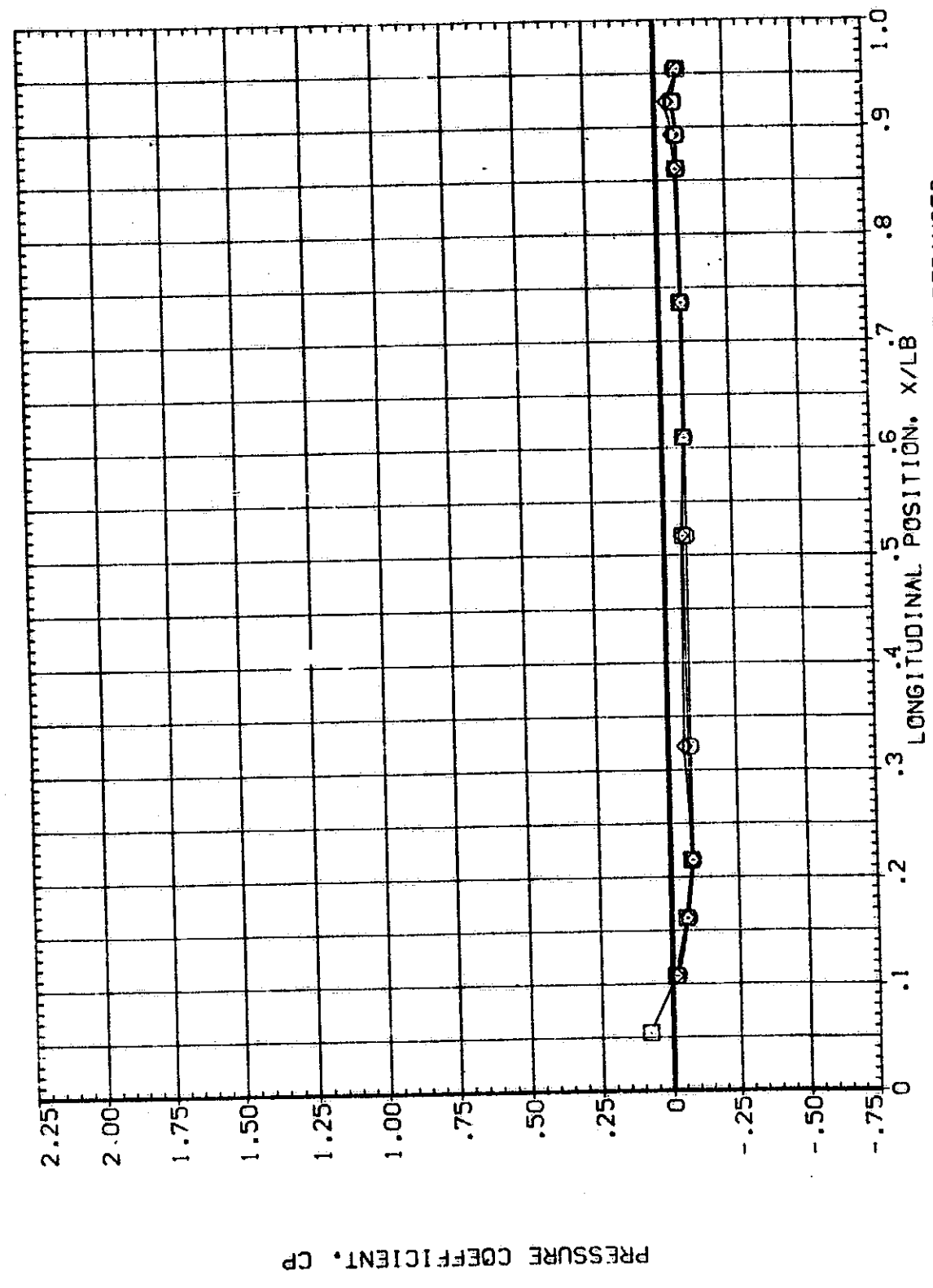


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (F11059)

SYMBOL    THETA    ALPHA    MACH  
 ○    315.000    24.680    3.480  
 □    326.000  
 ◇    346.000

PARAMETRIC VALUES  
 .000    .000    20.000  
 1.000    1.000    270.000  
 BETA    OFFSET    PHI  
 MOUNT

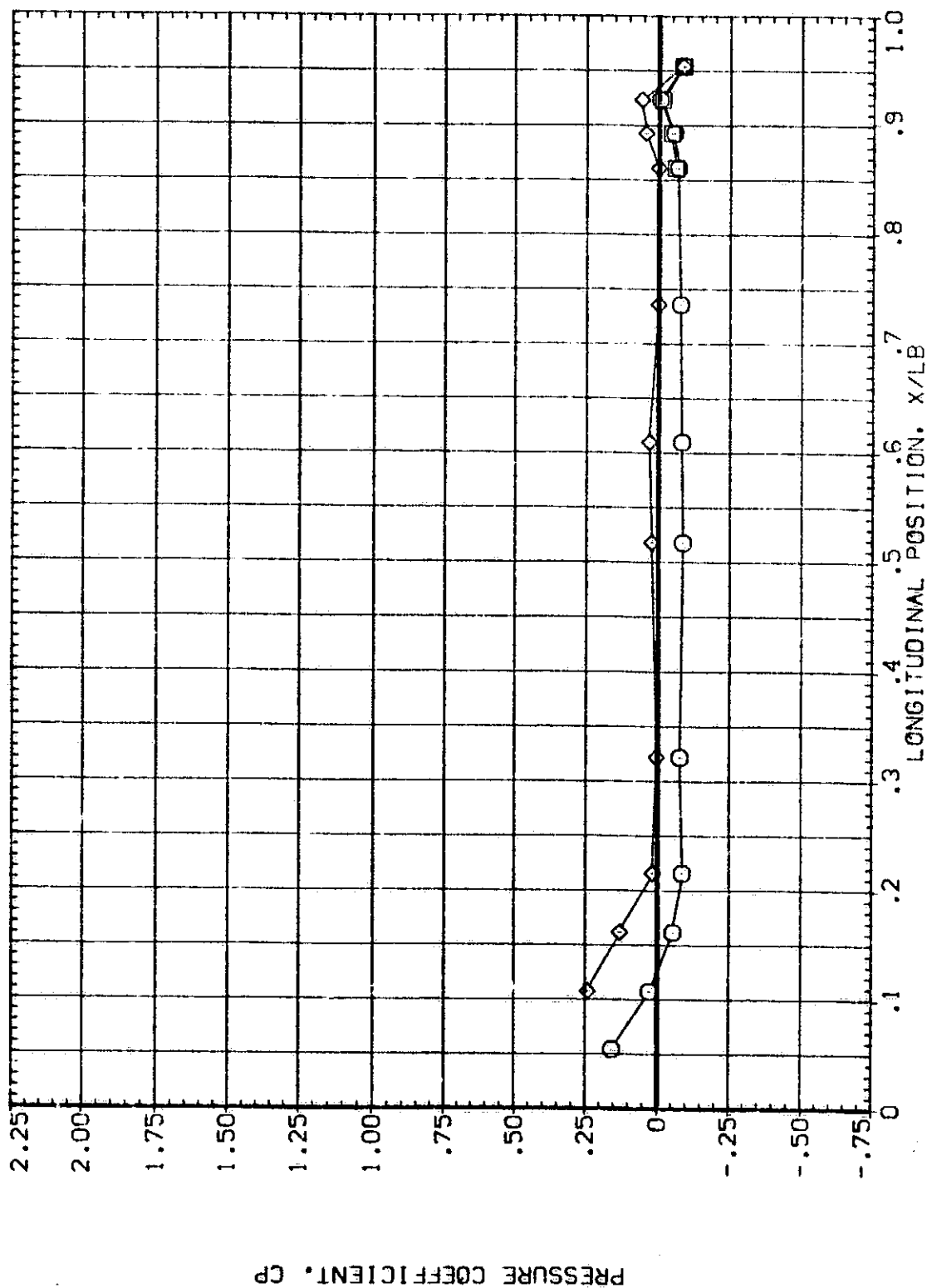


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A060)

SYMBOL  
○ □ ◇

THETA  
.000  
14.000  
24.000

ALPHA  
28.700

MACH  
3.480

PARAMETRIC VALUES  
.000  
1.000  
PHI

BETA  
MOUNT

20.000  
270.000

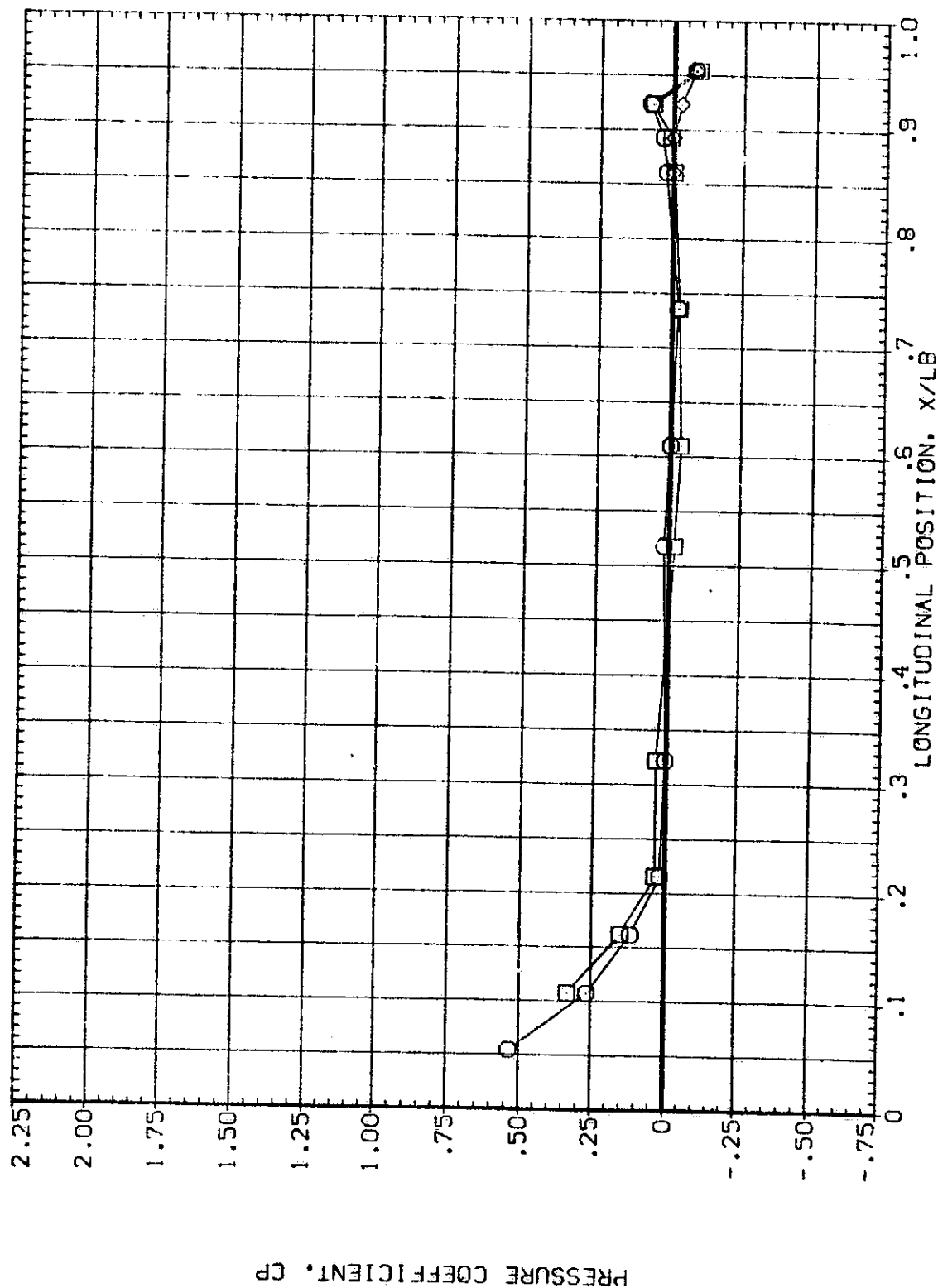


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	45.000	28.700	3.480	MOUNT	.000 OFFSET
□	67.500				1.000 PWT
◇	90.000				20.000
					270.000

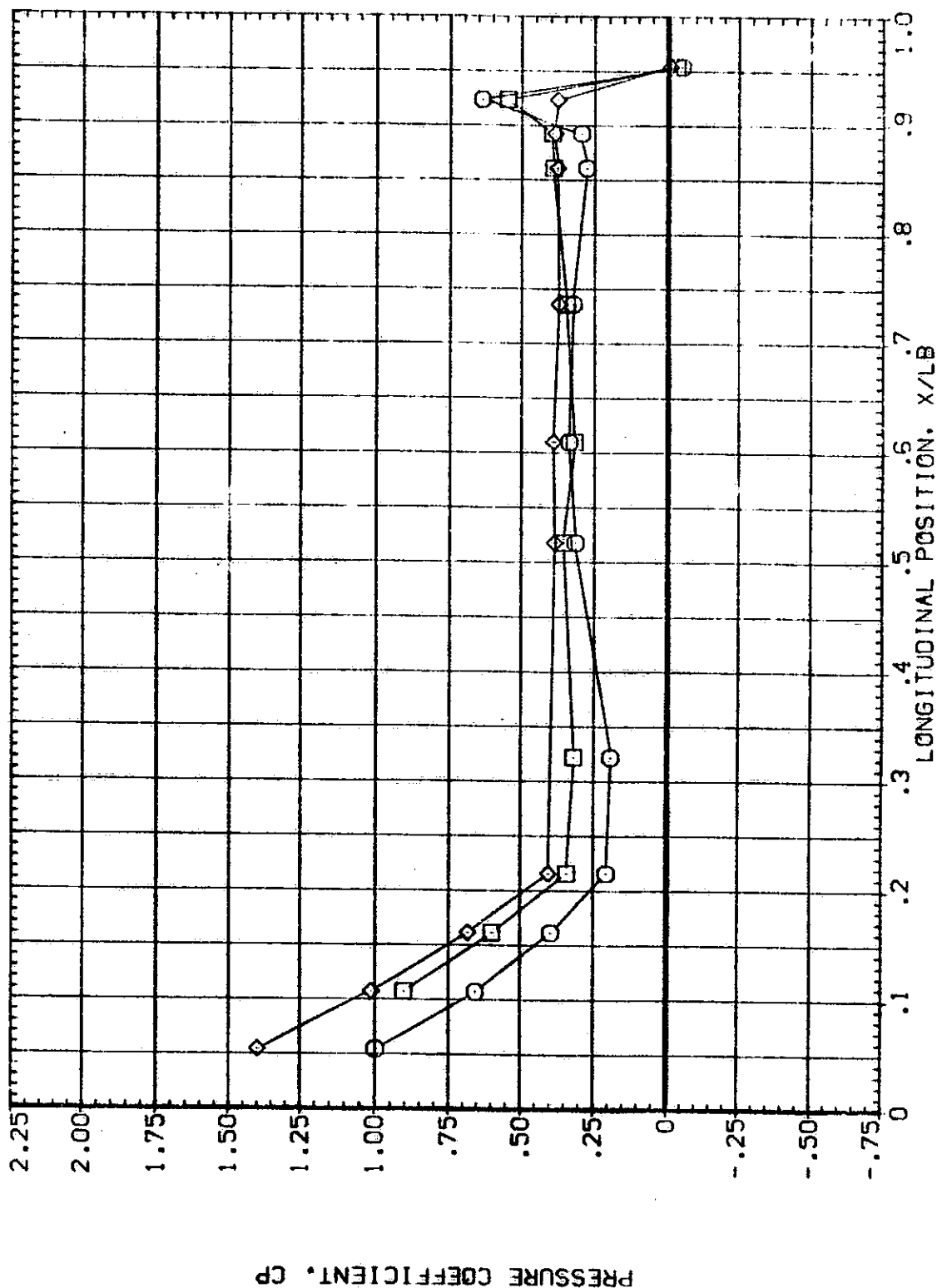


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA060)

SYMBOL  
□  
◇

THETA  
112.500  
135.000  
157.500

ALPHA  
28.700

MACH  
3.480

PARAMETRIC VALUES  
BETA  
MOUNT  
1.000  
1.000  
20.000  
270.000

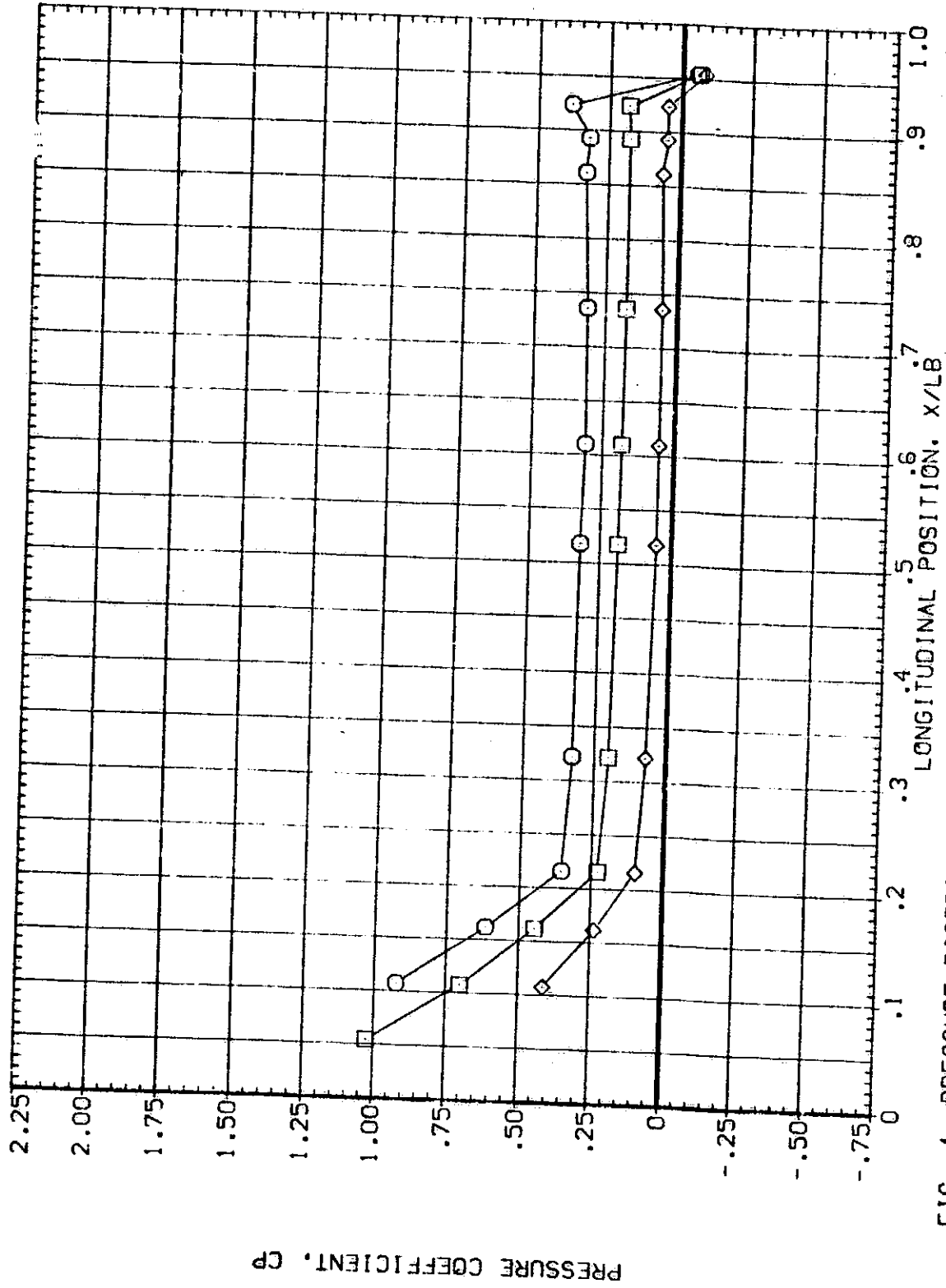


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A060)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 180.000  
 202.500  
 225.000

ALPHA  
 28.700

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI

20.000  
 270.000

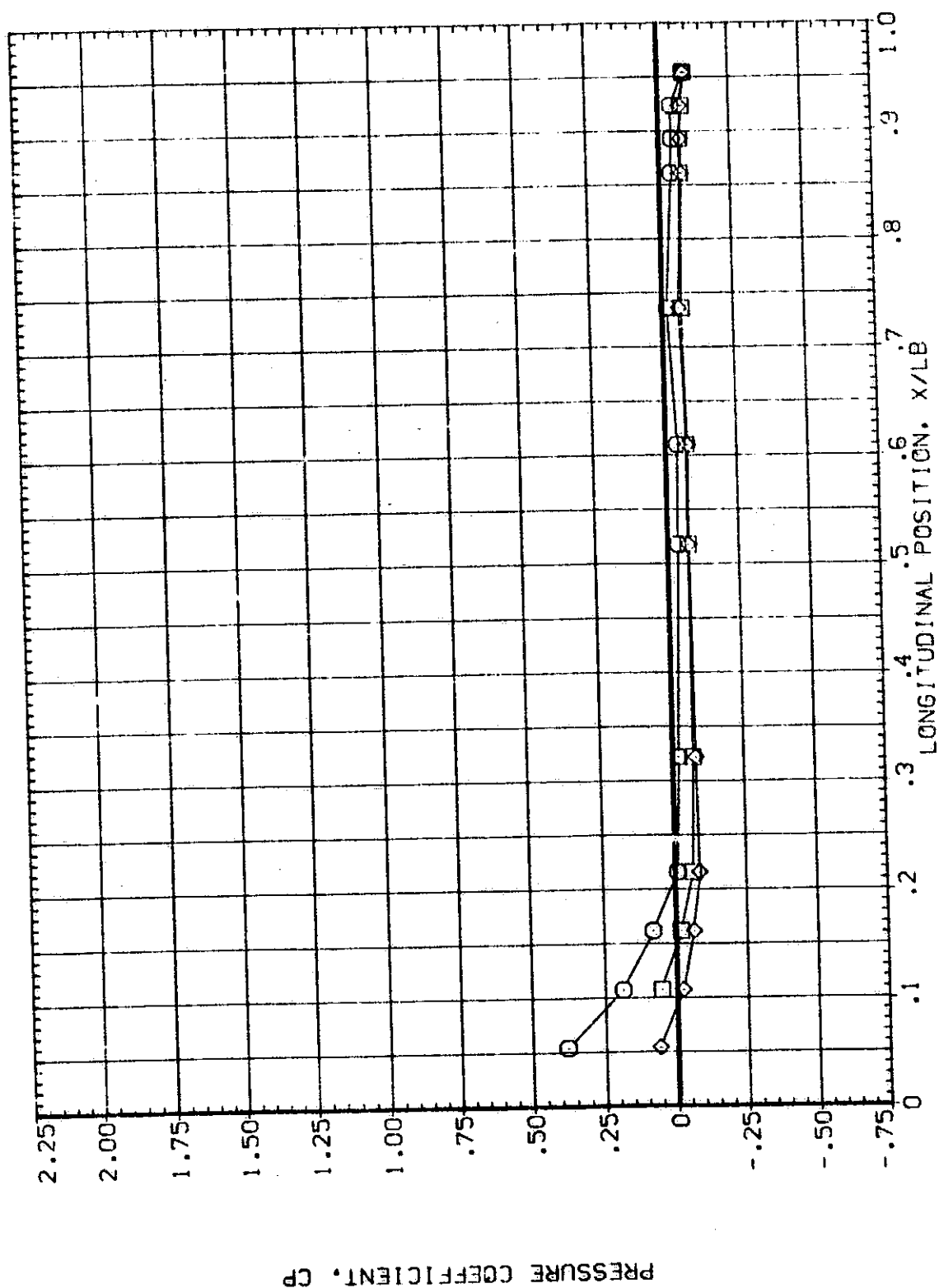


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES.

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA060)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	18.700	3.480		.000	20.000
□	270.000			MOUNT	1.000	270.000
◇	292.500					

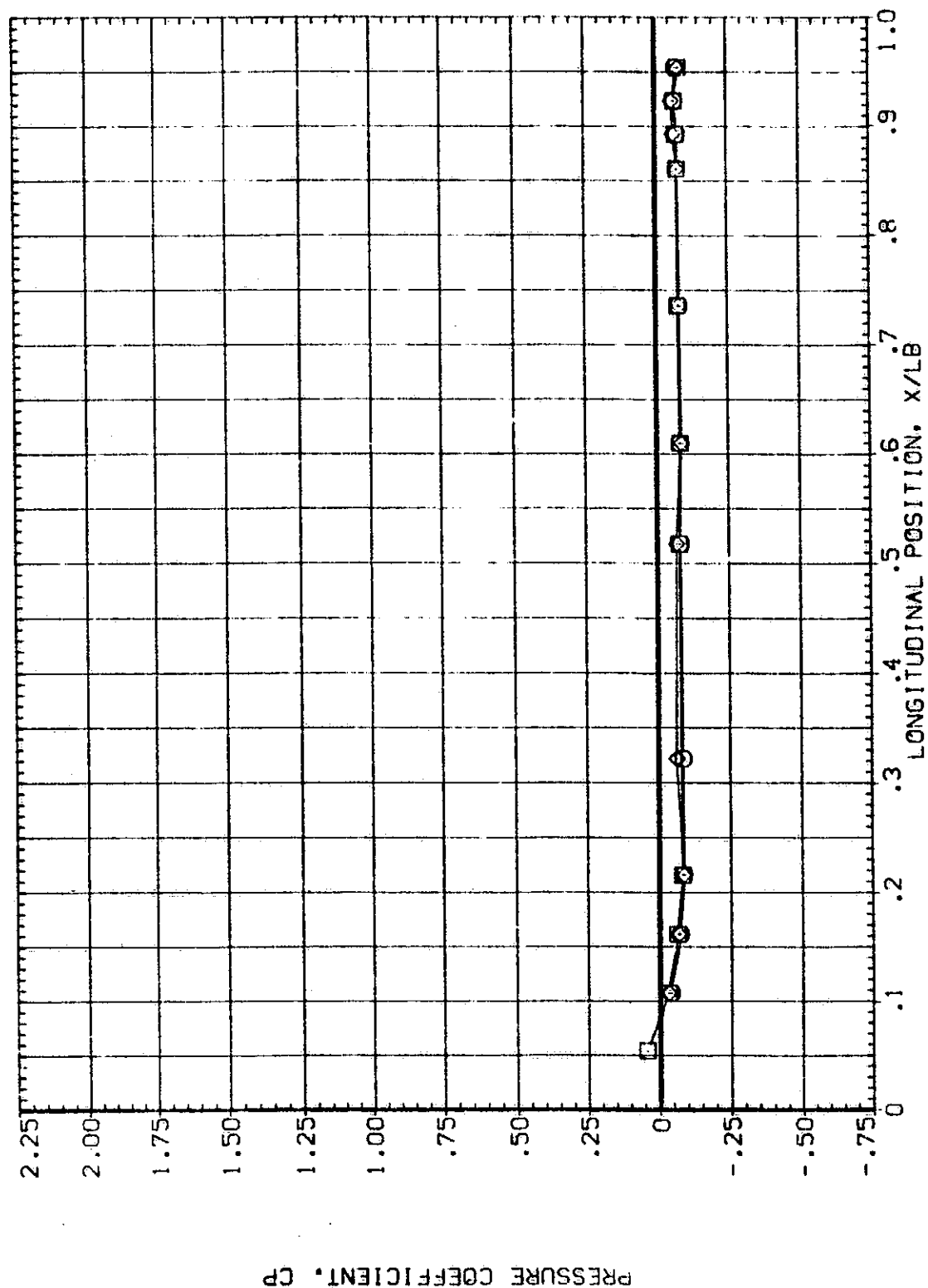


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI 270.000

THETA ALPHA MACH  
 315.000 28.700 3.480  
 326.000  
 346.000

SYMBOL  
 ○ □ ◇

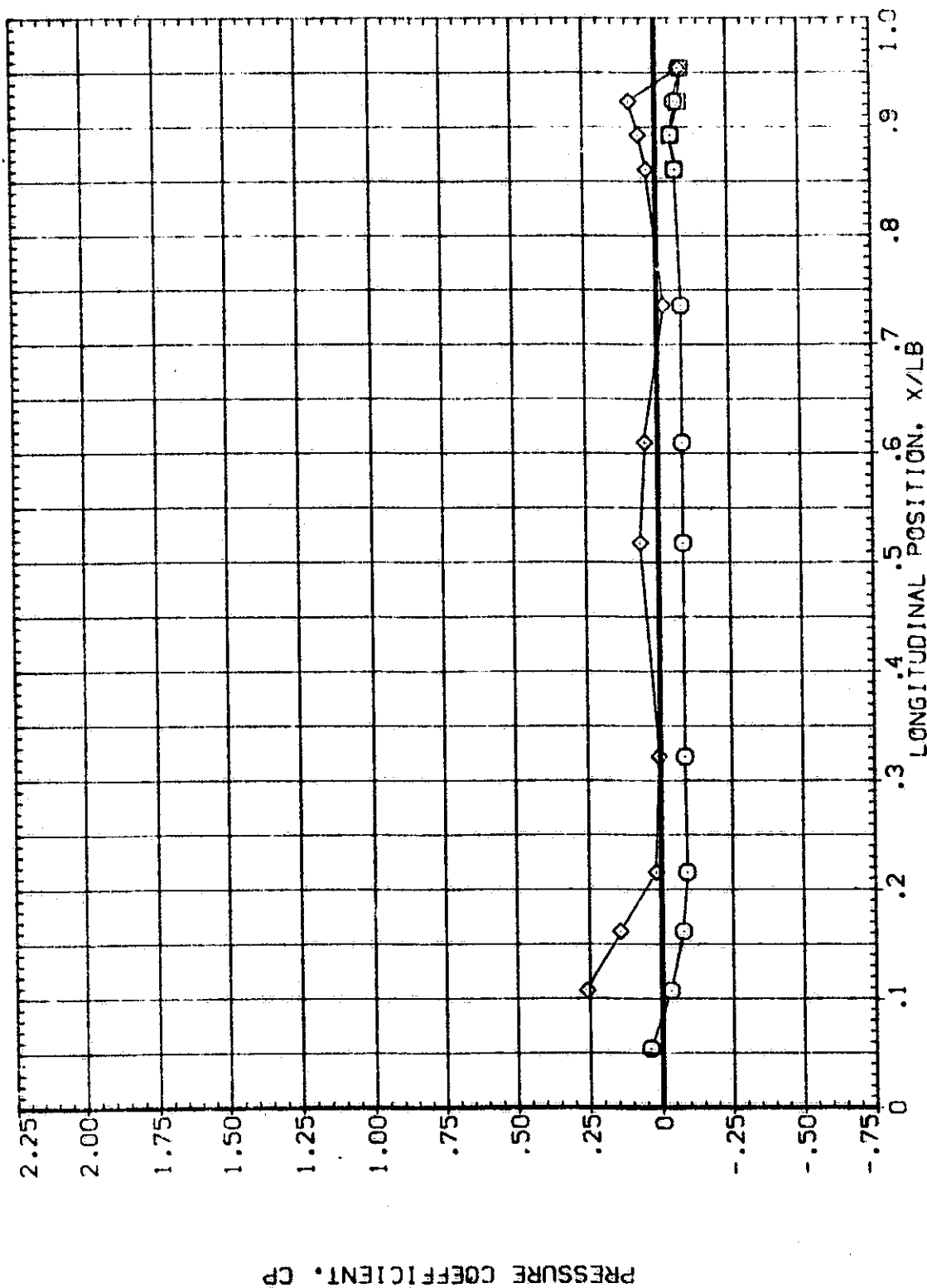


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA091)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES		
	.000	14.000	24.000	-8.360	3.480		BETA	OFFSET	PHI
○							1.000		
□									
◇									
							315.000		

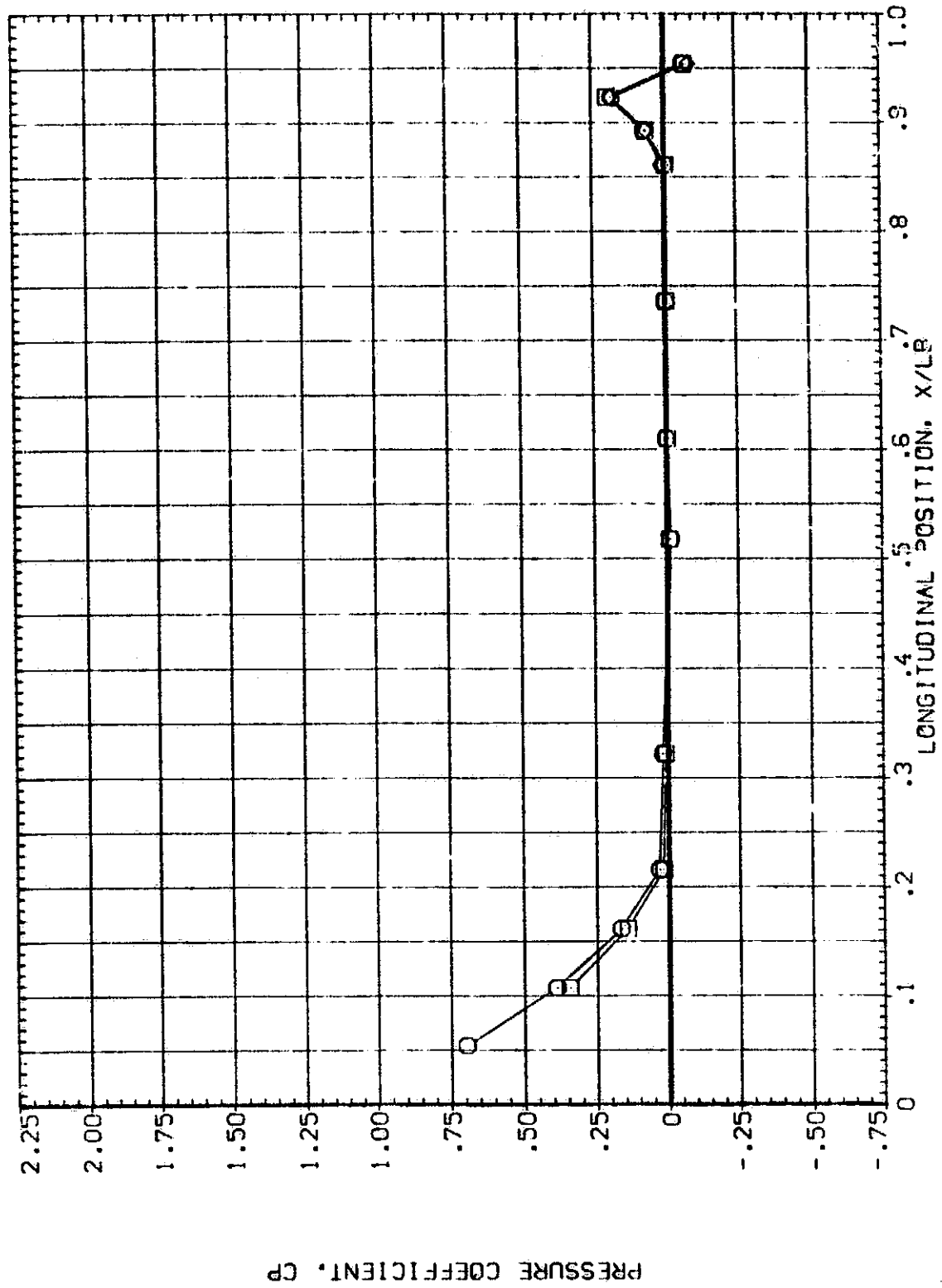


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA091)

PARAMETRIC VALUES  
 .000 .000  
 BETA OFFSET  
 MBUNT PHJ 1.000 315.000

THETA ALPHA MACH  
 45.000 -8.360 3.480  
 67.500  
 90.000

SYMBOL  
 ○ □ ◇

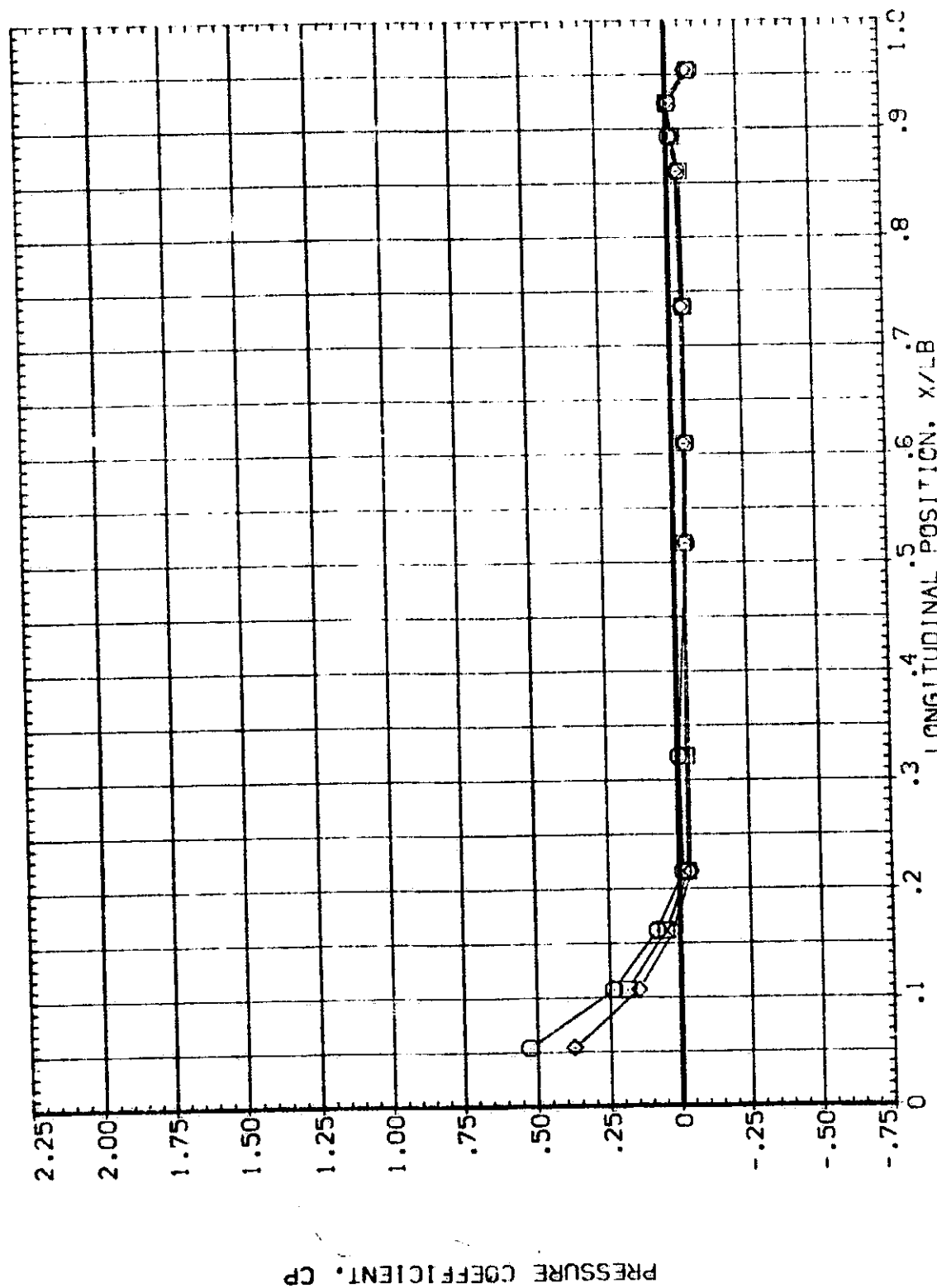


FIG. 4 PRESSURE DISTRIBUTION OVER E1 - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
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MSFC 596 (T:-2F) MCR0200 EXTERNAL TANK, T1 (P1A091)

SYMBOL    THETA    ALPHA    MACH  
□    112.500    -8.360    3.480  
□    135.000  
◇    157.500

PARAMETRIC VALUES  
BETA    .000    OFFSET    .000  
MOUNT    1.000    PHI    315.000

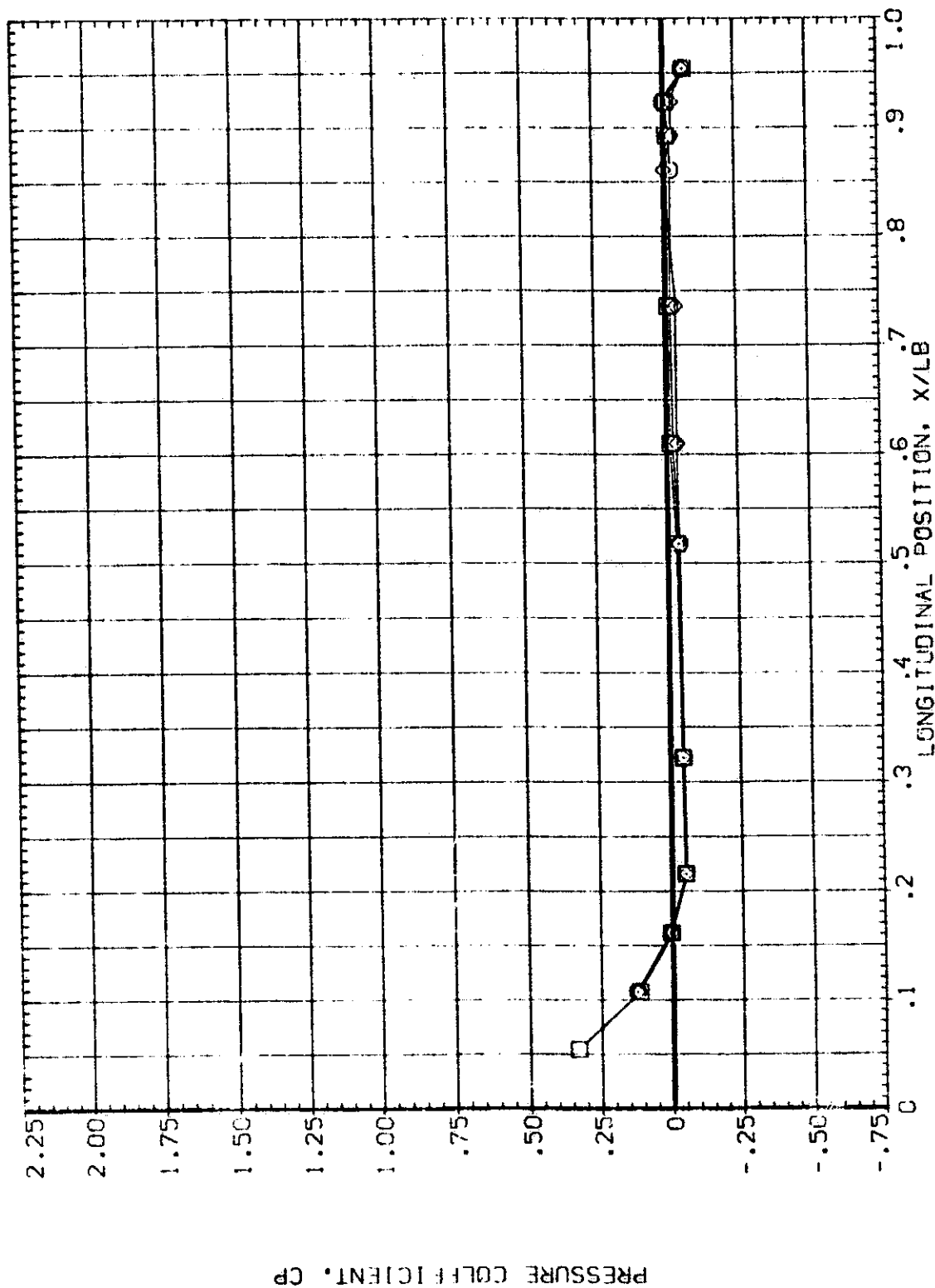


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 BETA .000  
 OFFSET 315.000  
 PHI 1.000

BETA  
 HOURS

ALPHA -8.360  
 MACH 3.480

THETA  
 180.000  
 202.500  
 225.000

SYMBOL  
 □  
 ○  
 ◇

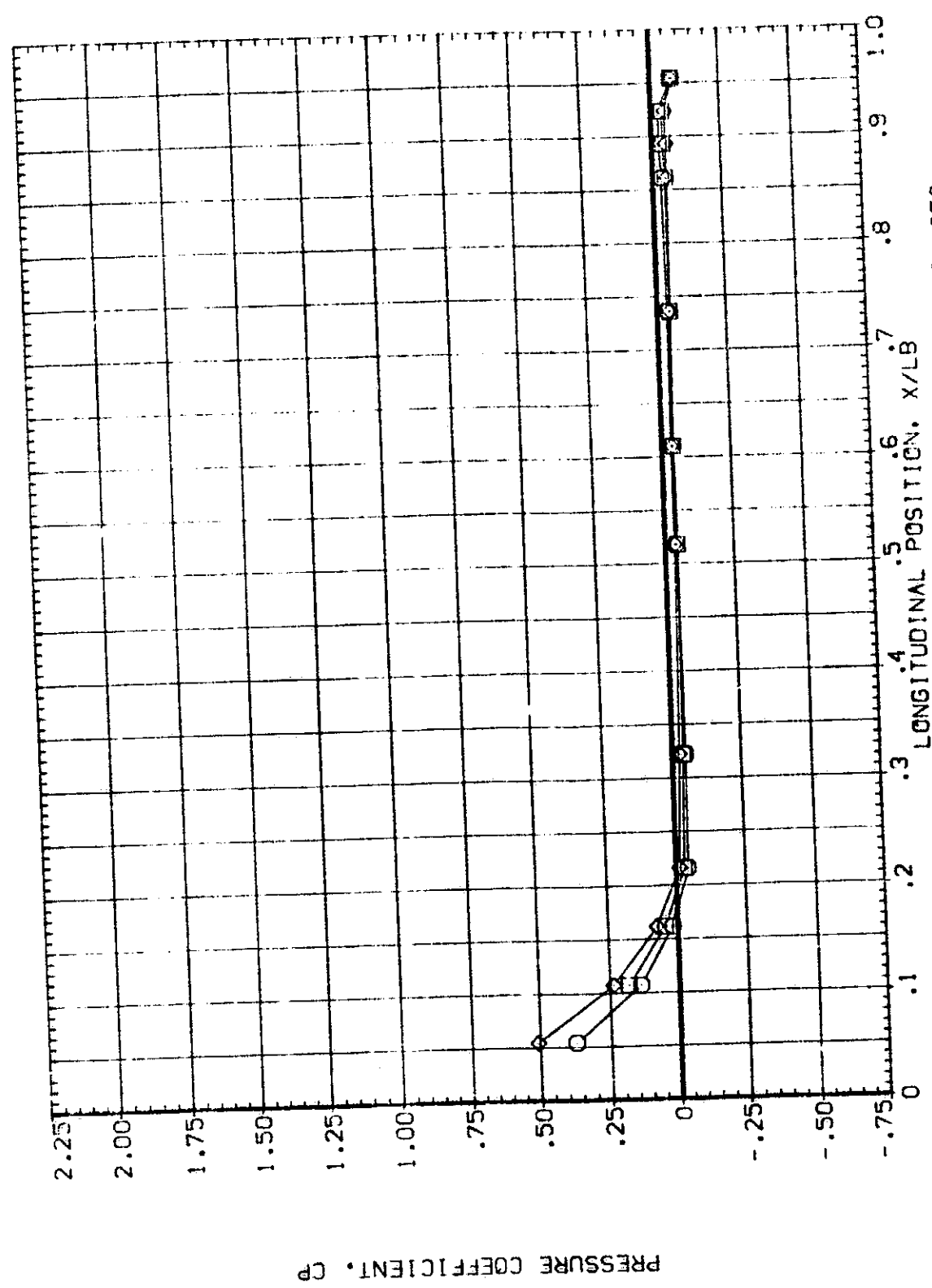


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A091)

SYMBOL  
□  
◇

THETA  
247.500  
270.000  
292.500

ALPHA  
-8.360

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
315.000

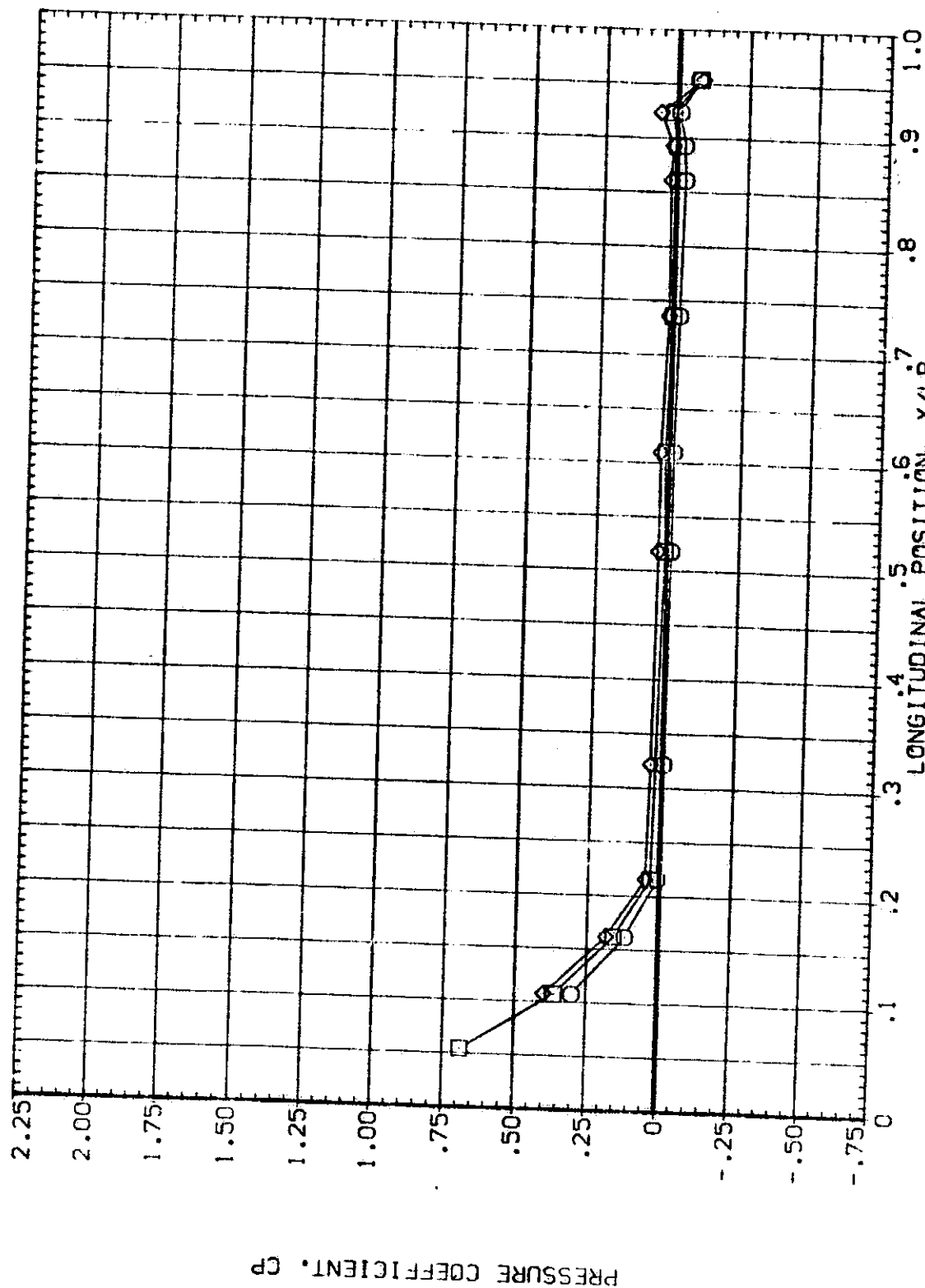


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



PARAMETRIC VALUES  
 .000 .000 .000  
 OFFSET PHI 315.000

BETA  
 HOUNT

ALPHA MACH  
 -8.360 3.480

SYMBOL THETA  
 315.000  
 326.000  
 346.000

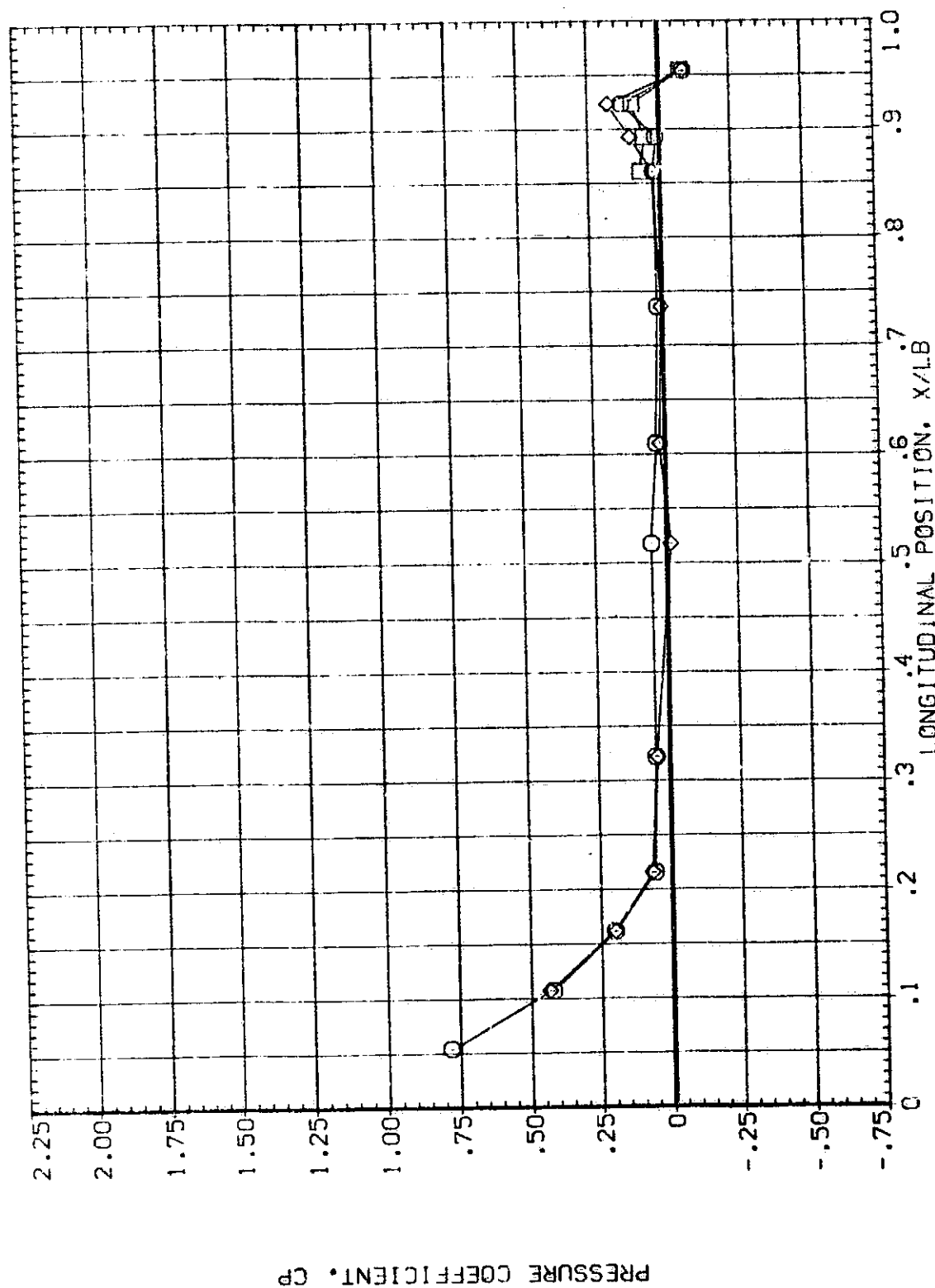


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA092)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 -4.330

MACH  
 9.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 315.000  
 PHI

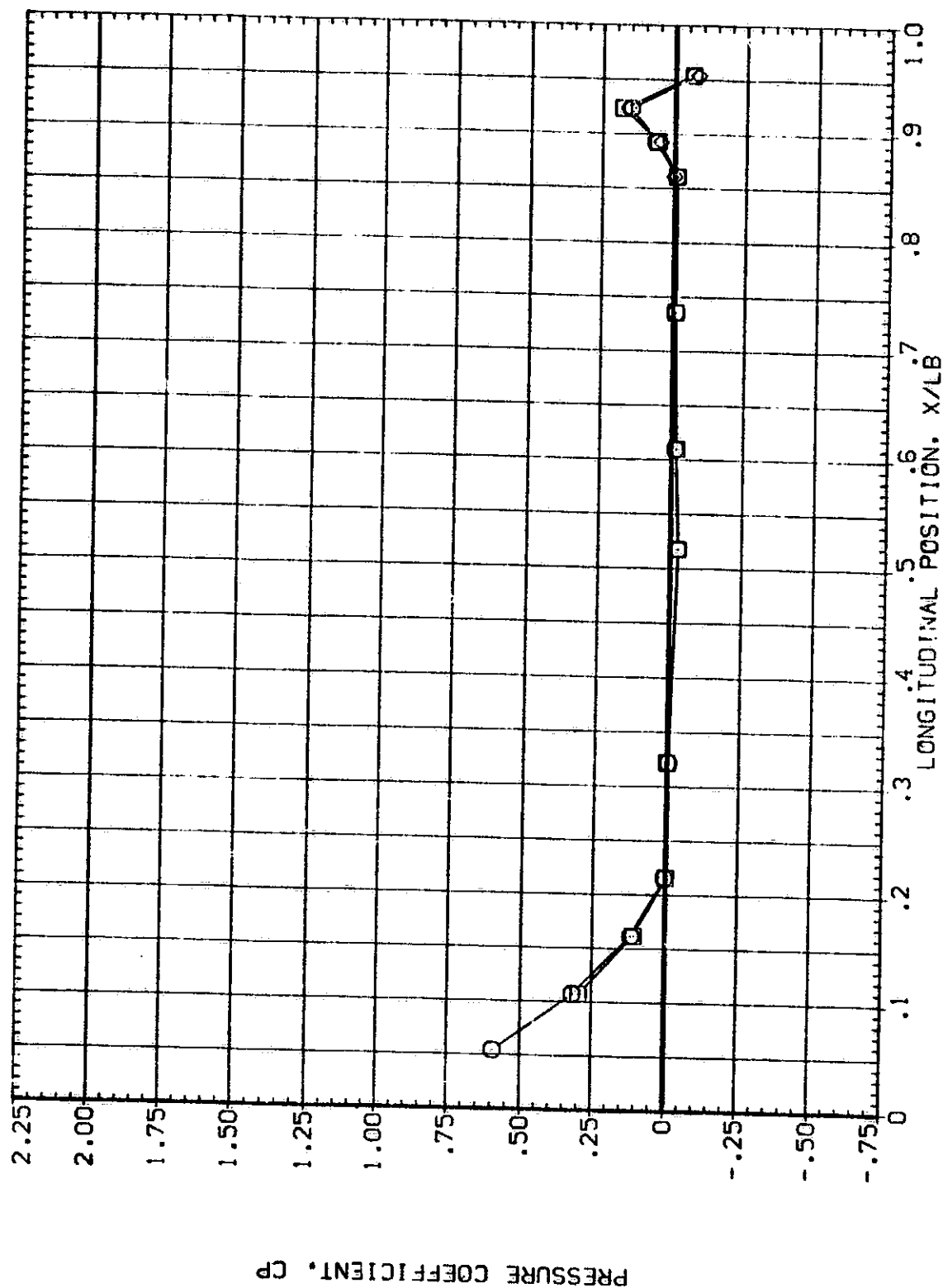


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	45.000	-4.330	3.480	1.000	.000 OFFSET
□	67.500			1.000	PHI
◇	90.000				315.000

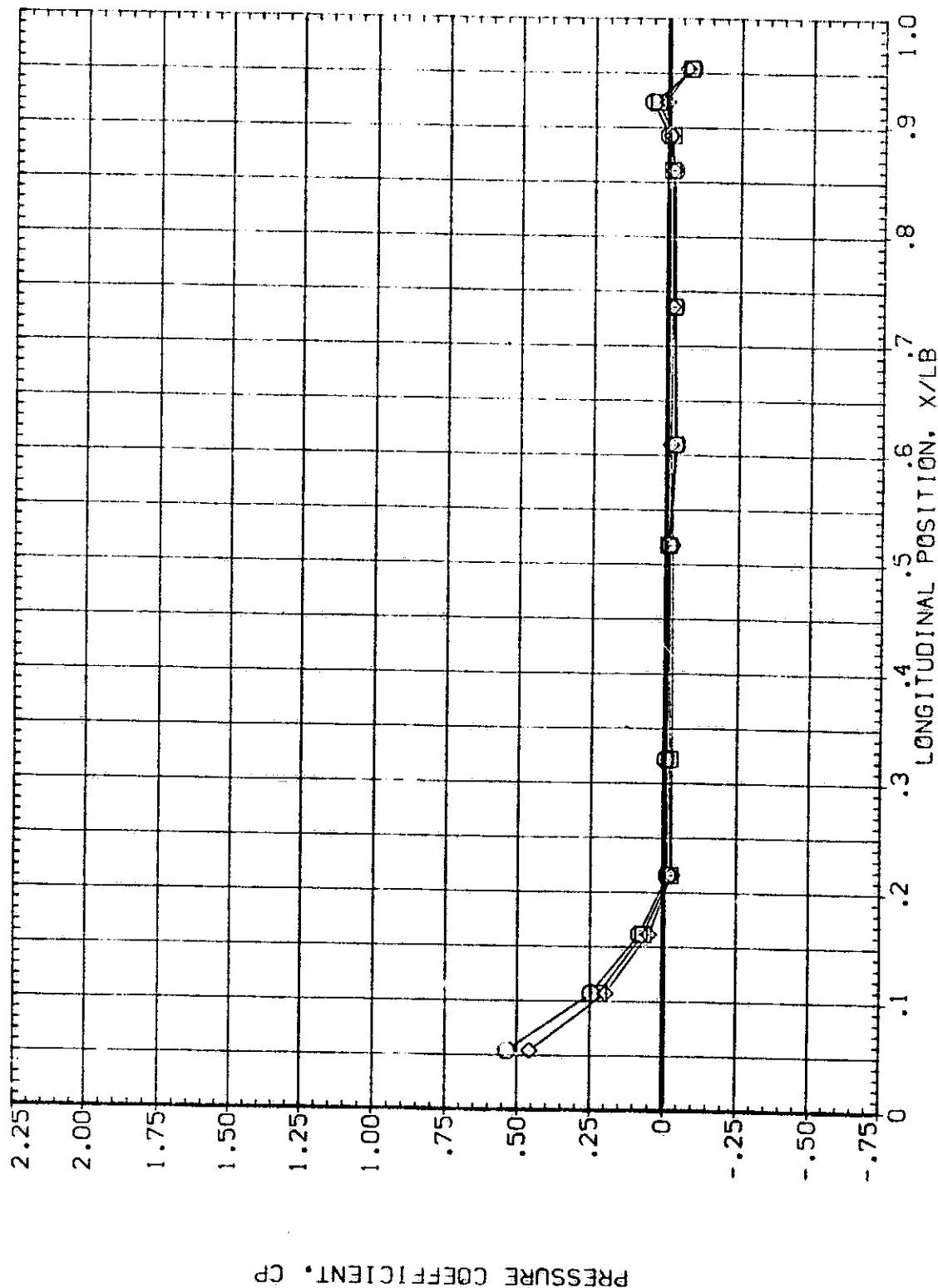


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (PIA092)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	112.500	-4.330	3.480		.000	.000
□	135.000			MOUNT	1.000	315.000
◇	157.500					

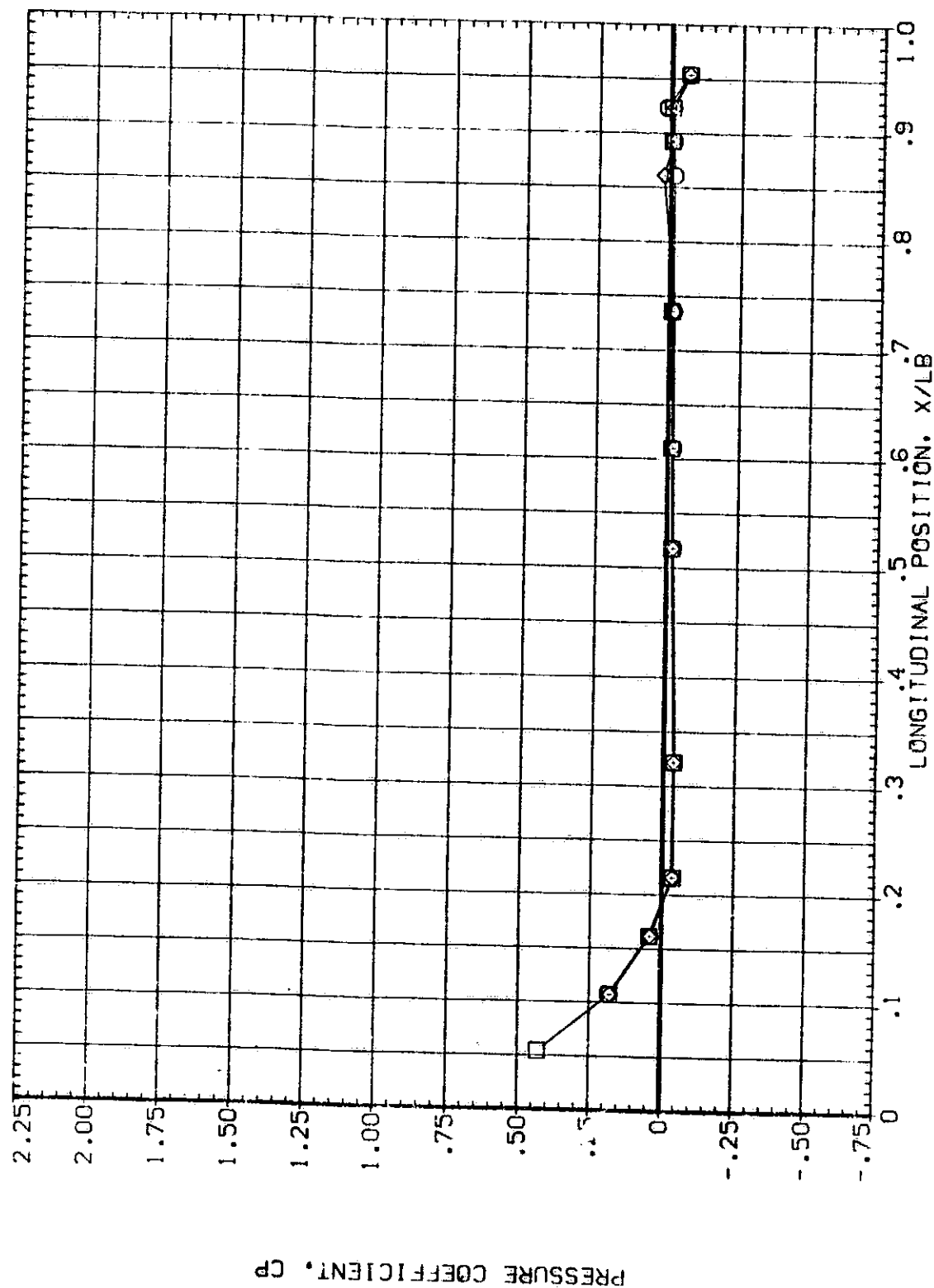


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
□	180.000	-4.330	3.480	BOUND	.000 OFFSET .000
◇	202.500				1.000 P-HI 315.000
◇	225.000				

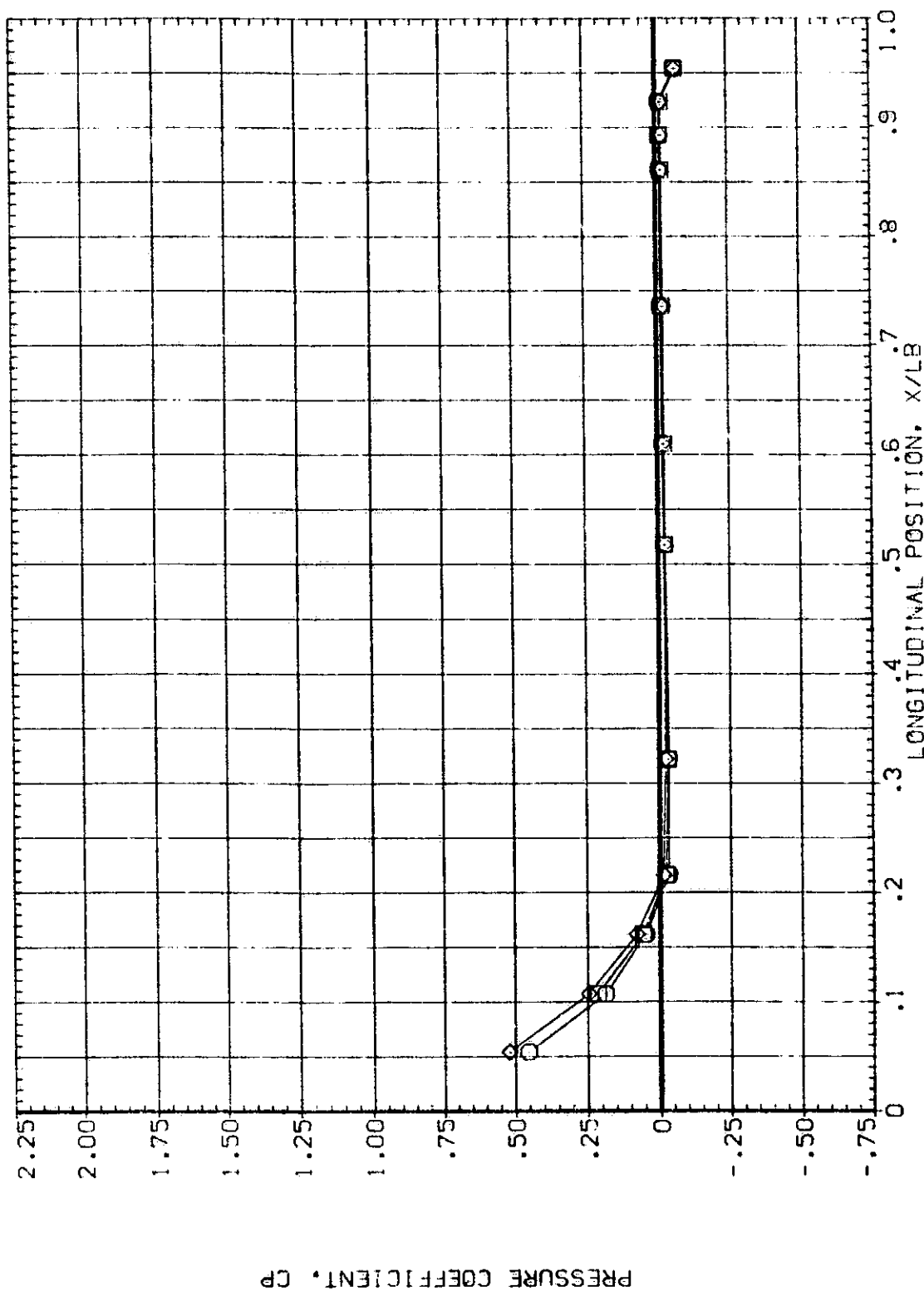


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA092)

SYMBOL  
 □  
 ◇

THETA  
 247.500  
 270.000  
 292.500

ALPHA  
 -4.330

MACH  
 3.480

BETA  
 HOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 OFFSET  
 PHI

.000  
 315.000

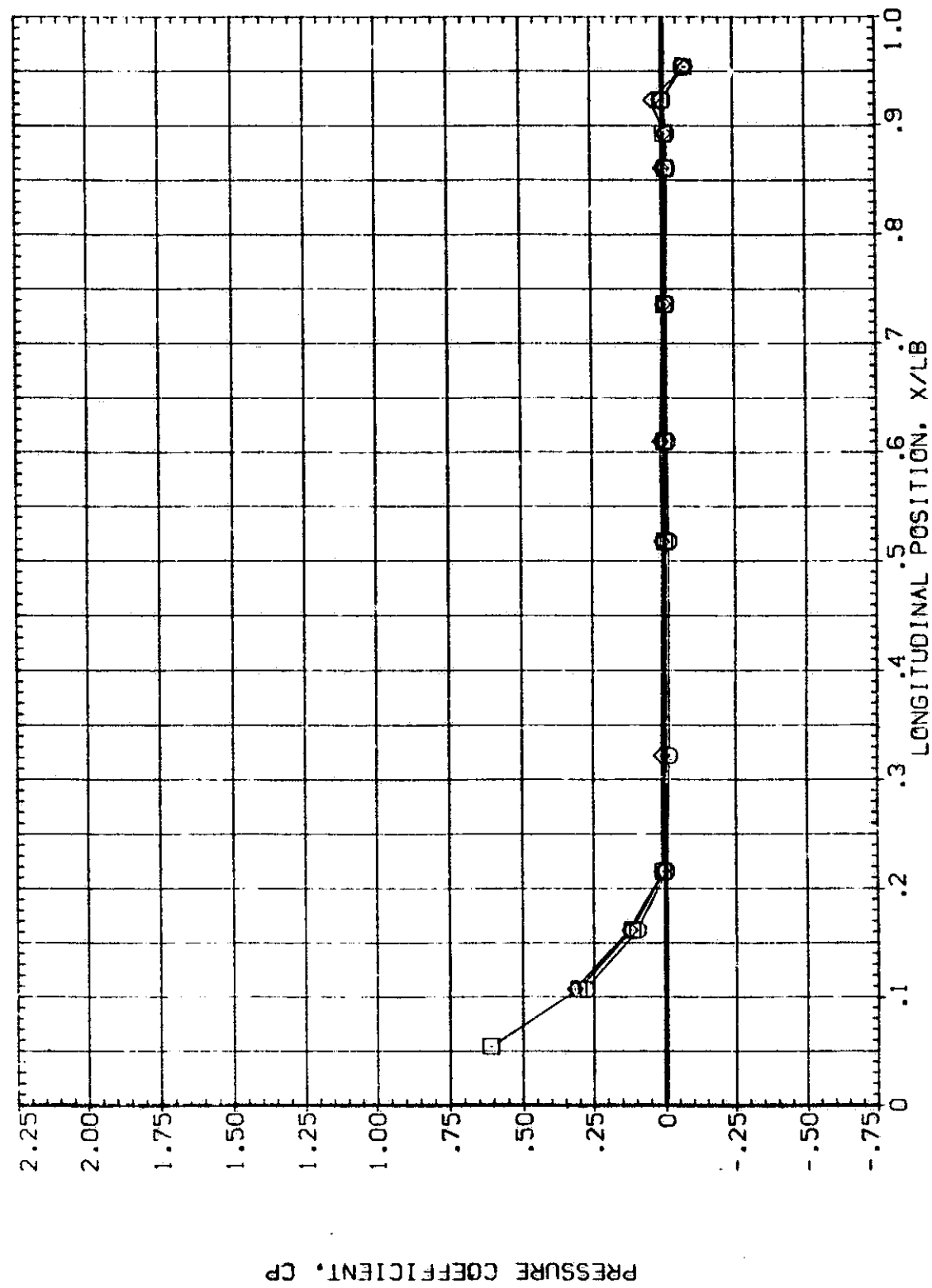


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	BETA	PARAMETRIC VALUES
○	315.000	-4.330	3.480	.000	OFFSET .000
□	226.000			1.000	PHI 315.000
◇	346.000				

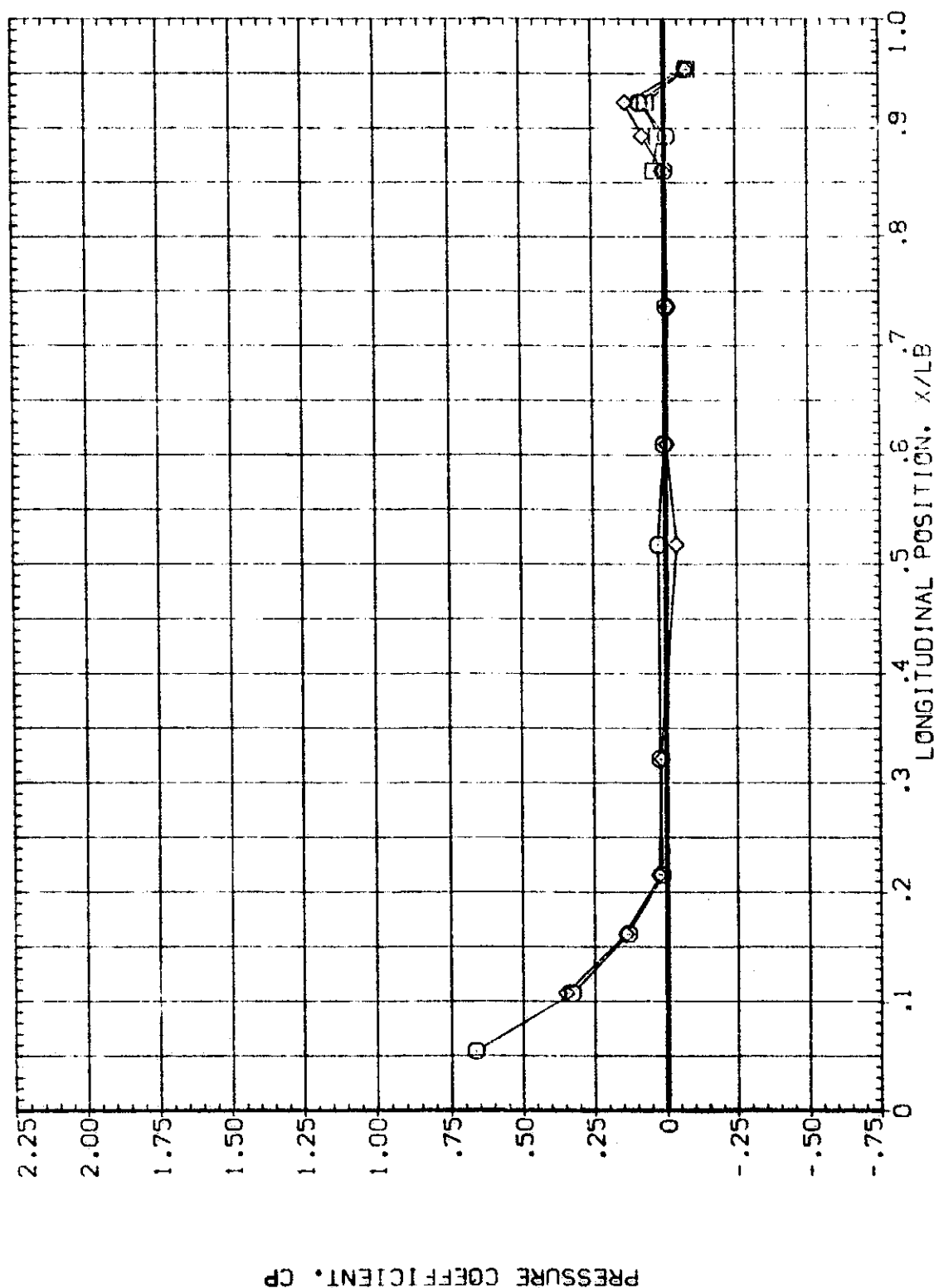


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA093)

SYMBOL

THETA  
 .000  
 14.000  
 24.000

ALPHA  
 -.280

MACH  
 3.480

ETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 PHI

315.000

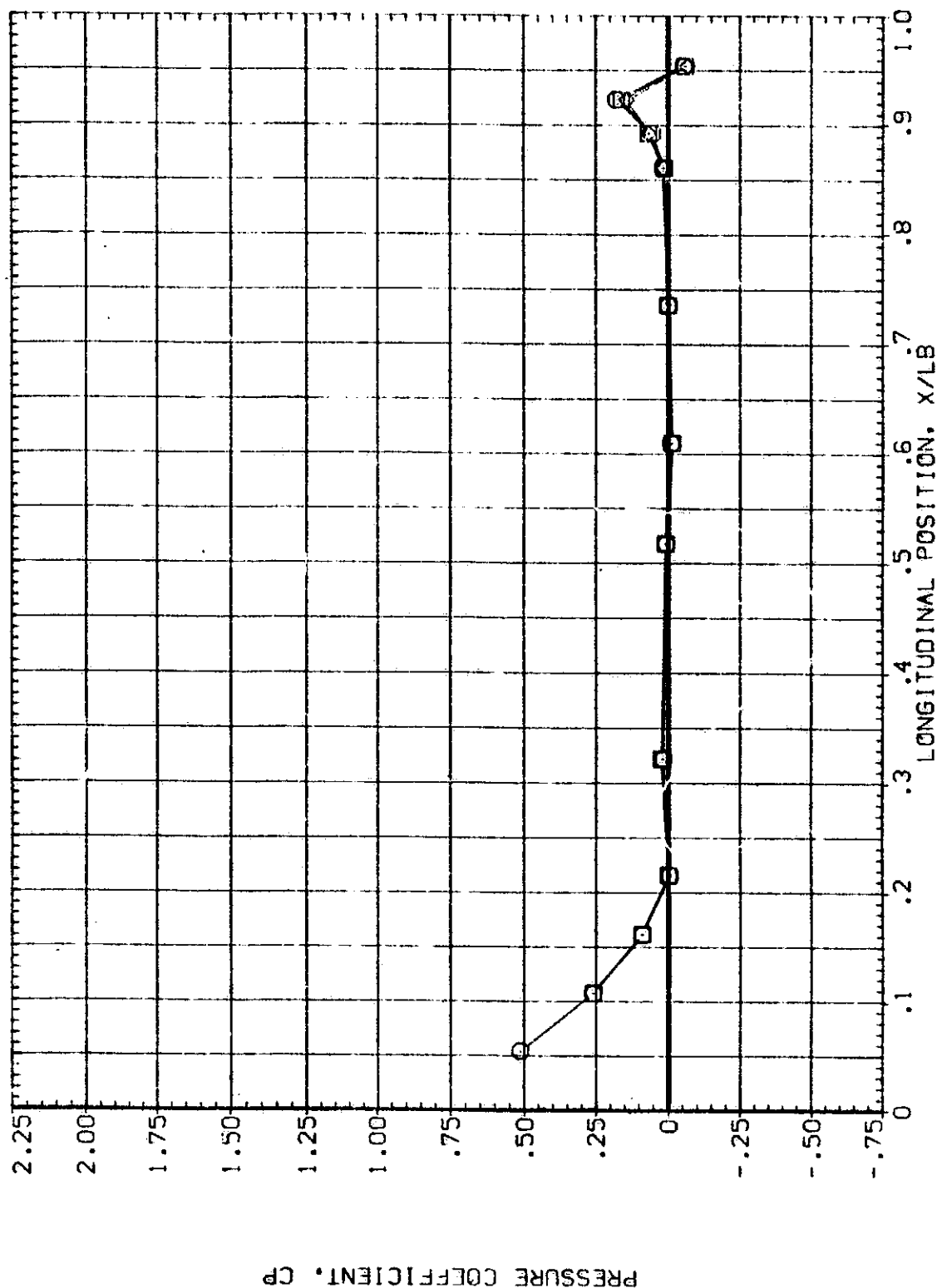


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET PH1  
 .000  
 315.003

SYMBOL  
 THETA 45.000  
 ALPHA -.280  
 MACH 3.480  
 67.500  
 90.000

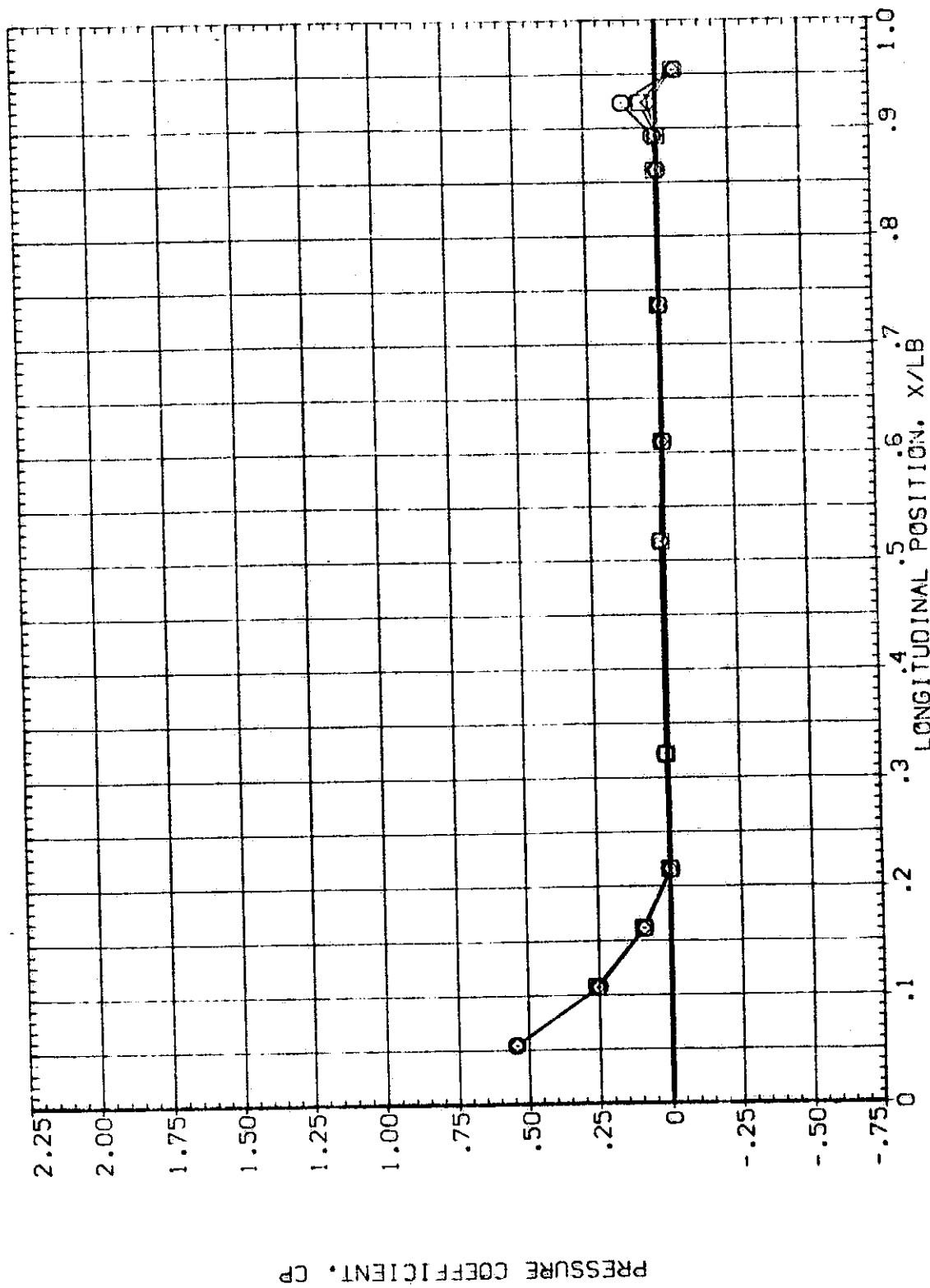


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA093)

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 OFFSET .000  
 PHI 315.000

SYMBOL THETA ALPHA MACH  
 □ 112.500  
 □ 135.000  
 ◇ 157.500

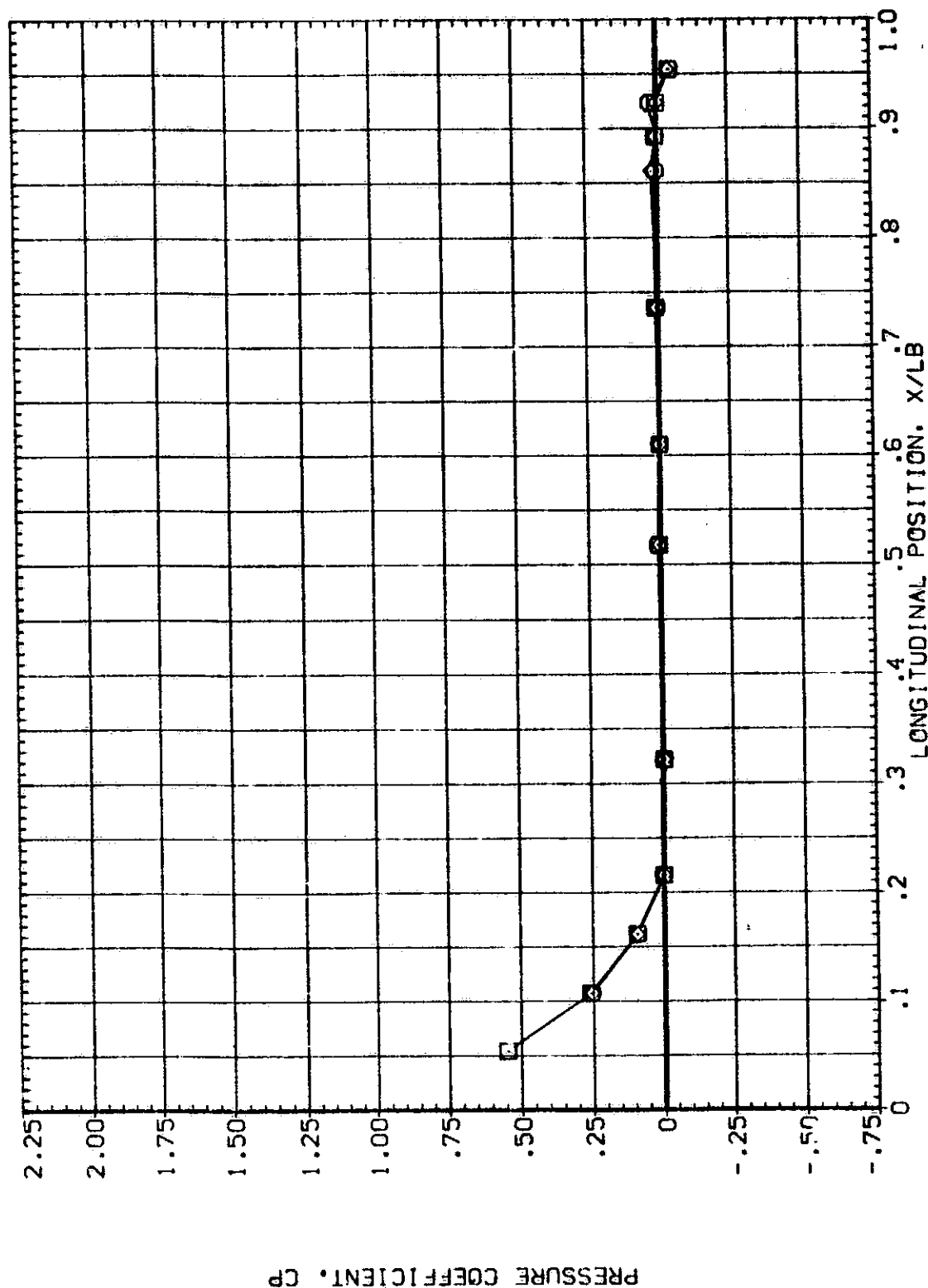


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 □  
 ◇

THETA 180.000  
 202.500  
 225.000

ALPHA -.280

MACH 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000 .000 .000  
 1.000 1.000 315.000  
 PHI

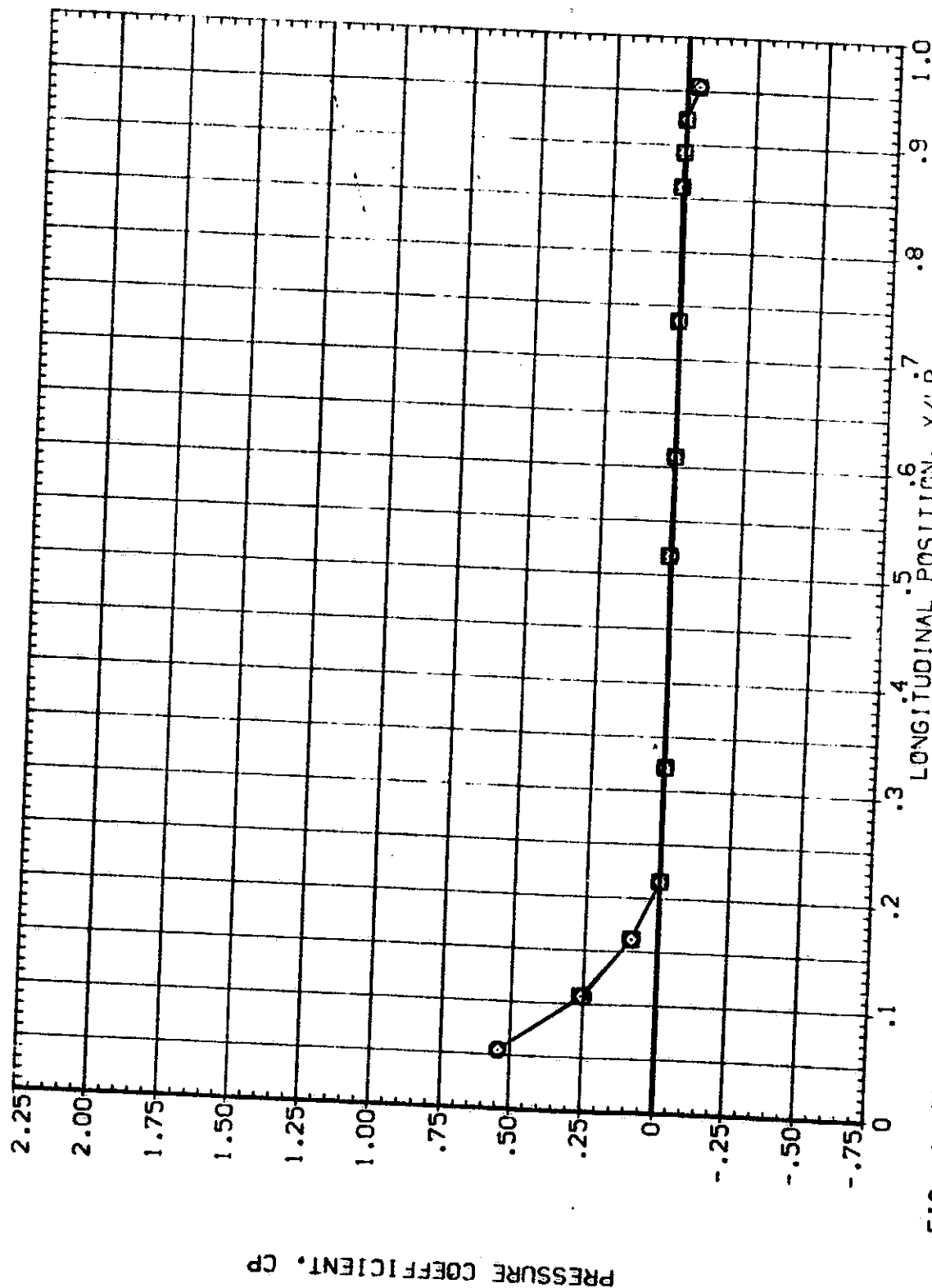


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A093)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	-.280	3.480	.000	.000	.000
□	270.000			1.000		315.000
◇	292.500					

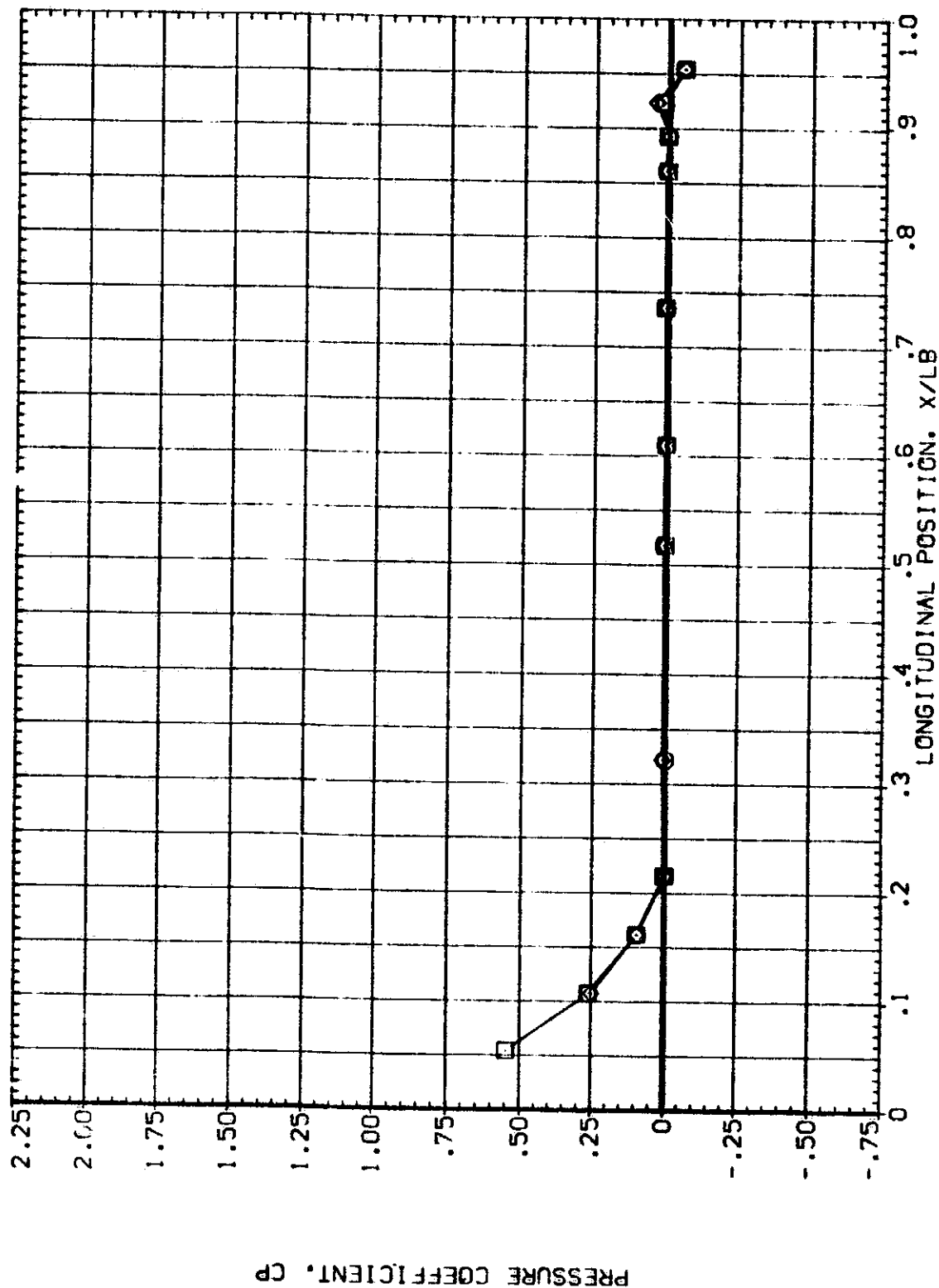


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 .000  
 OFFSET 315.000  
 PH1

BETA  
 MOUNT

ALPHA MACH  
 -.280 3.480

THETA  
 315.000  
 326.000  
 346.000

SYMBOL  
 ○ □ ◇

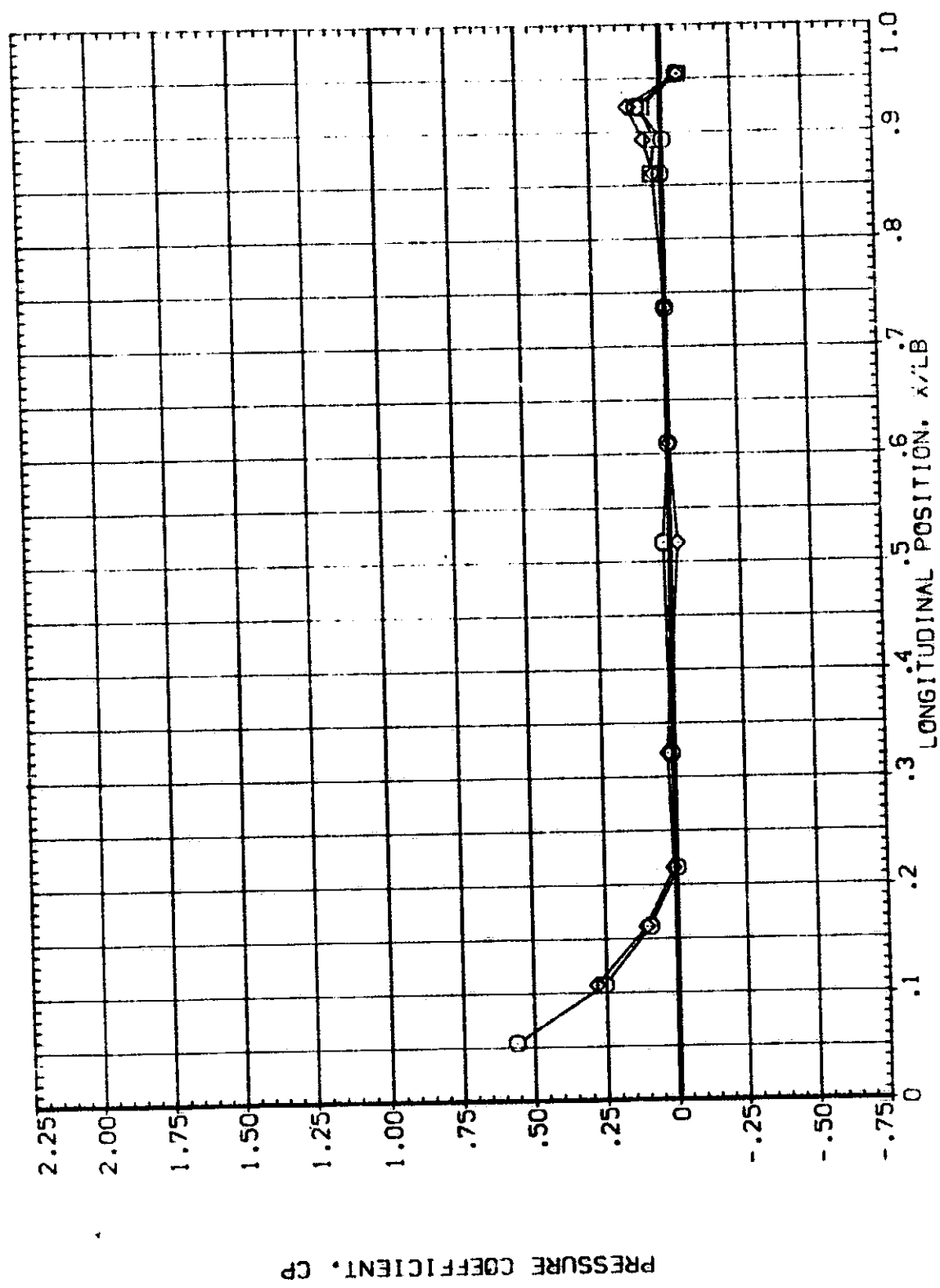


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
 ORIGINAL PAGE IS POOR



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA094)

SYMBOL  
◇  
□  
◇

THETA  
.000  
14.000  
24.000

ALPHA  
3.770

MACH  
3.480

PARAMETRIC VALUES  
.000  
1.000  
OFFSET  
PHI  
315.000

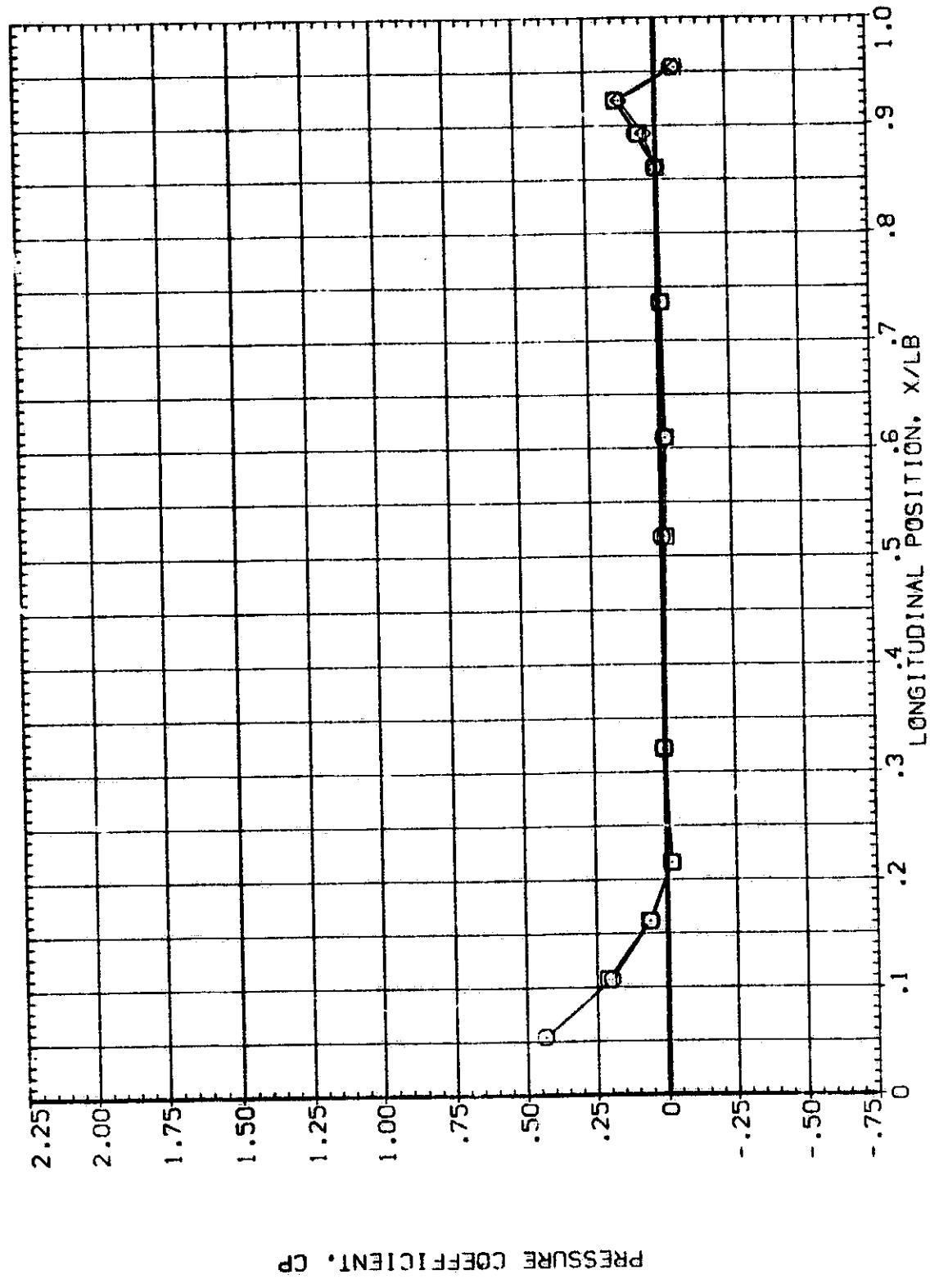


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 BETA .000  
 MOUNT 1.000  
 PH1 .000  
 315.000

THETA ALPHA MACH  
 45.000 3.770 3.480  
 67.500  
 90.000

SYMBOL  
 □  
 ◇

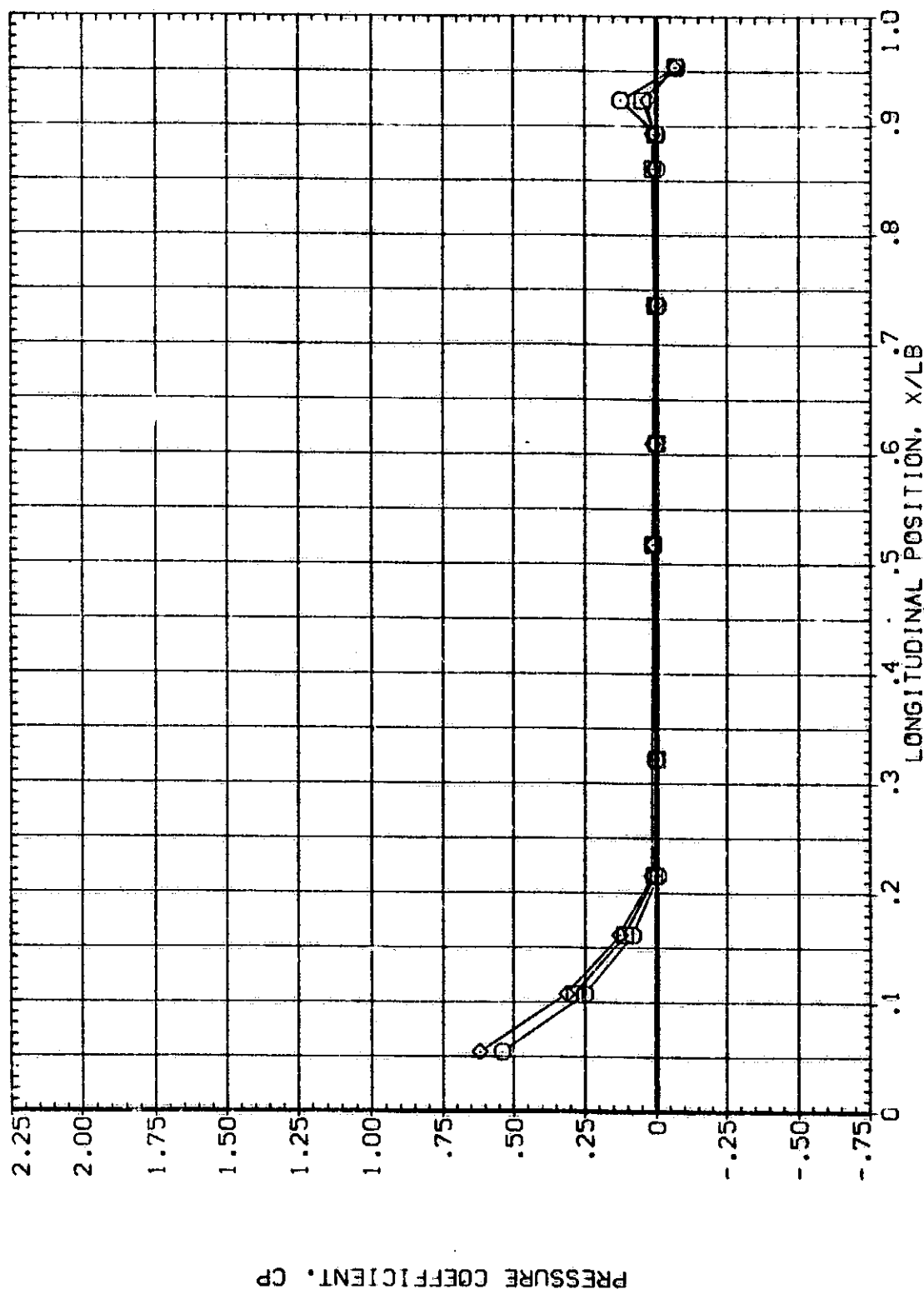


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A094)

SYMBOL THETA ALPHA MACH  
 ○ 112.500 3.770 3.480  
 □ 135.000  
 ◇ 137.500

PARAMETRIC VALUES  
 .000 .000  
 BETA OFFSET  
 MOUNT PHI 315.000

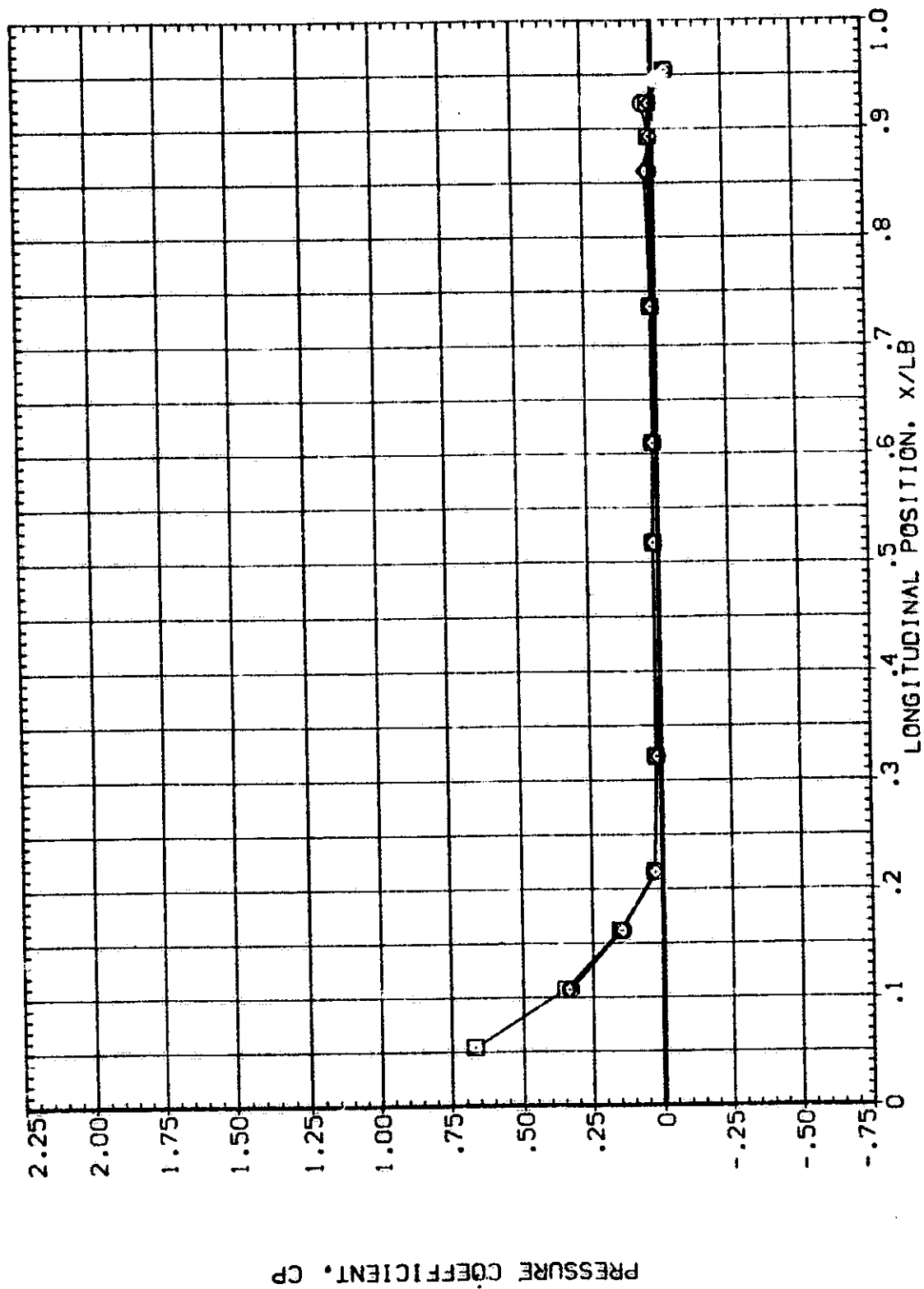


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A094)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 180.000  
 202.500  
 225.000

ALPHA  
 3.770

MACH  
 3.480

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 315.000

BETA  
 MOUNT

OFFSET  
 PHI

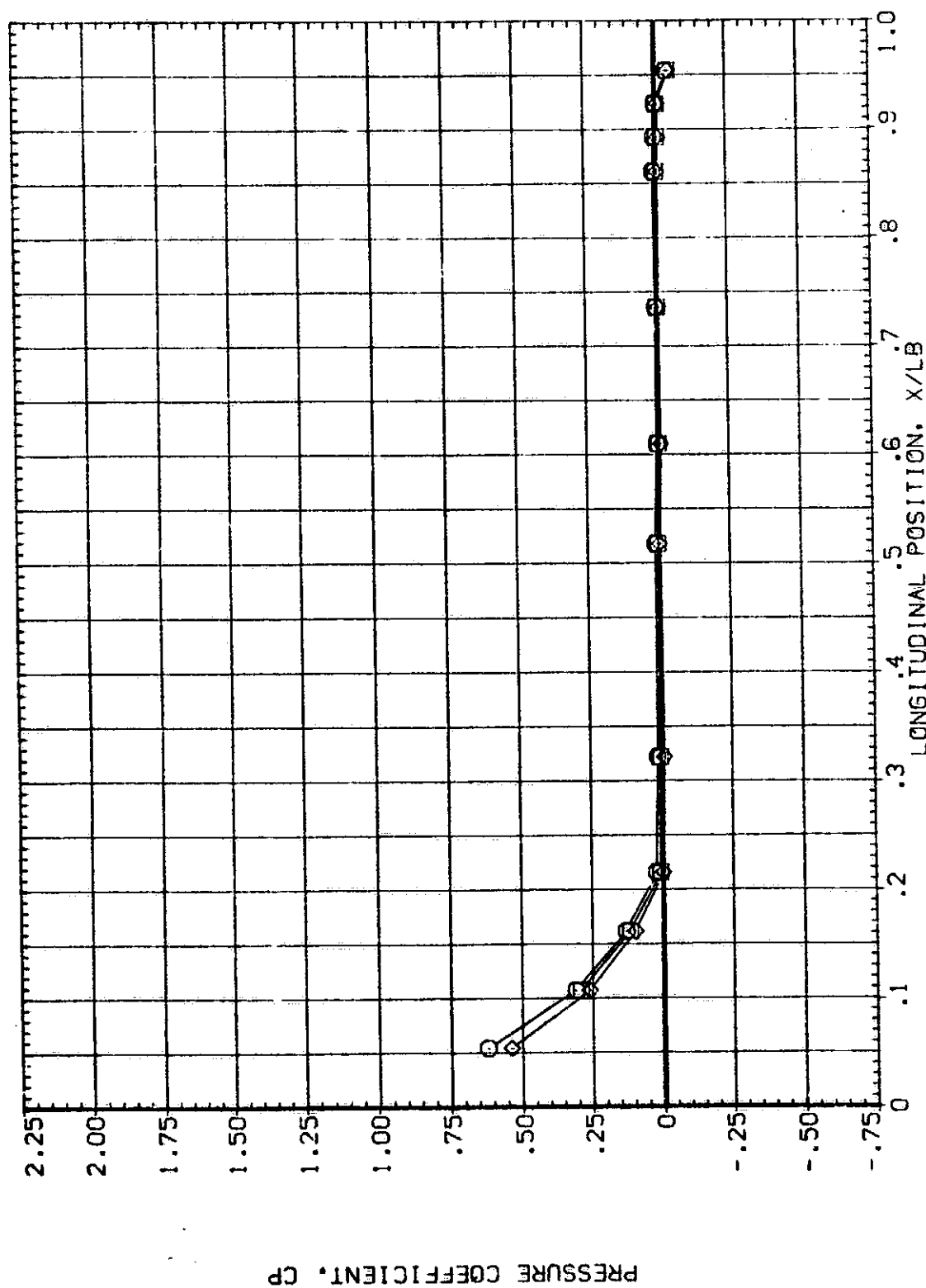


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A094)

SYMBOL  
 ○ □ ◇

THETA  
 247.500  
 270.000  
 292.500

ALPHA  
 3.770

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 315.000  
 OFFSET  
 PHI

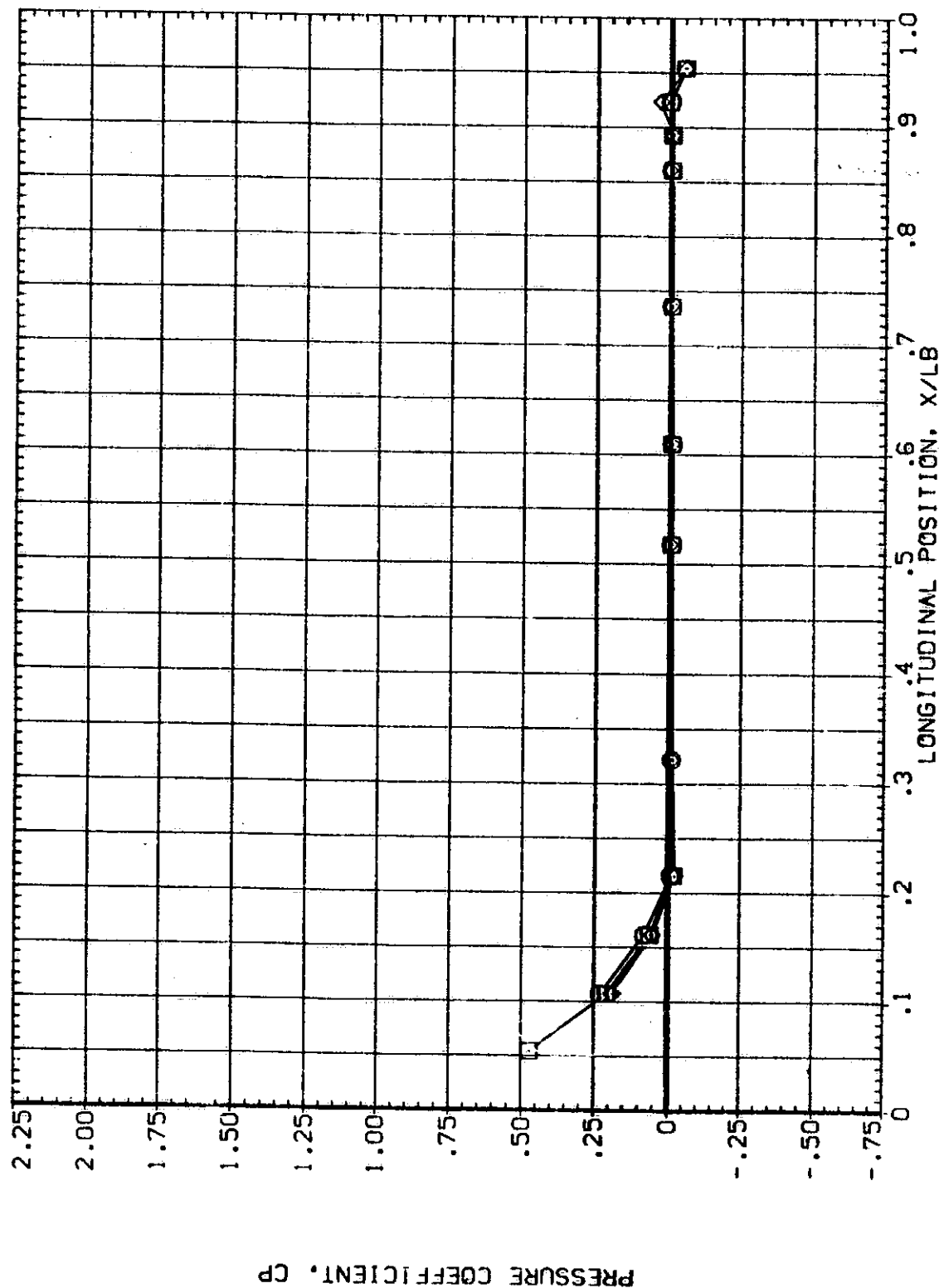


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (PIA094)

SYMBOL  
○  
□  
◇

THETA  
315.000  
326.000  
346.000

ALPHA  
3.770  
3.480

MACH  
3.480

BETA  
MOUNT

PARAMETRIC VALUES  
.000  
1.000  
PHI  
315.000

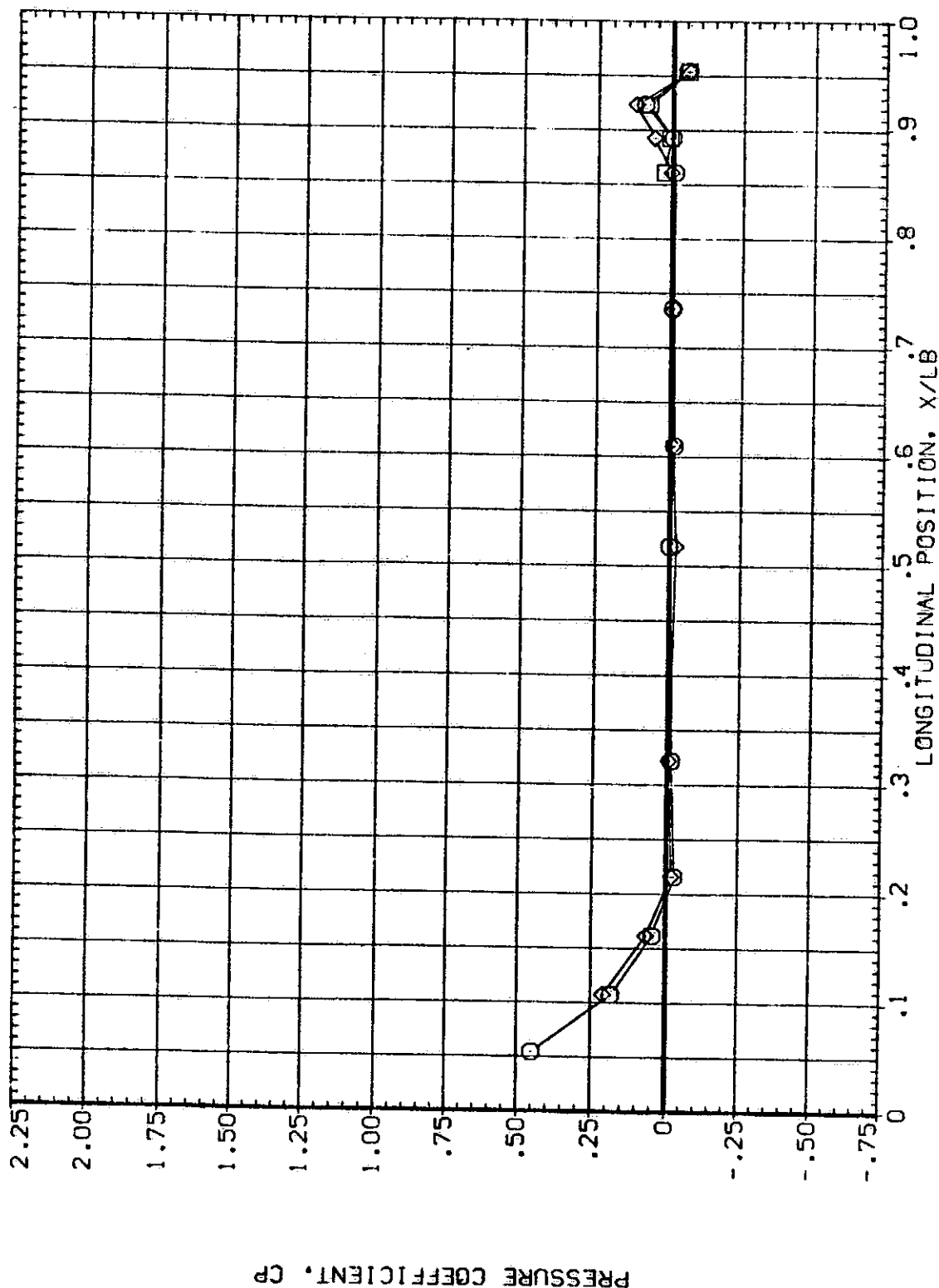


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A095)

SYMBOL  
□  
◇

THETA  
.000  
14.000  
24.000

ALPHA  
7.800

MACH  
3.480

BETA  
MSUNT

PARAMETRIC VALUES

.000  
1.000  
OFFSET  
PHI  
315.000

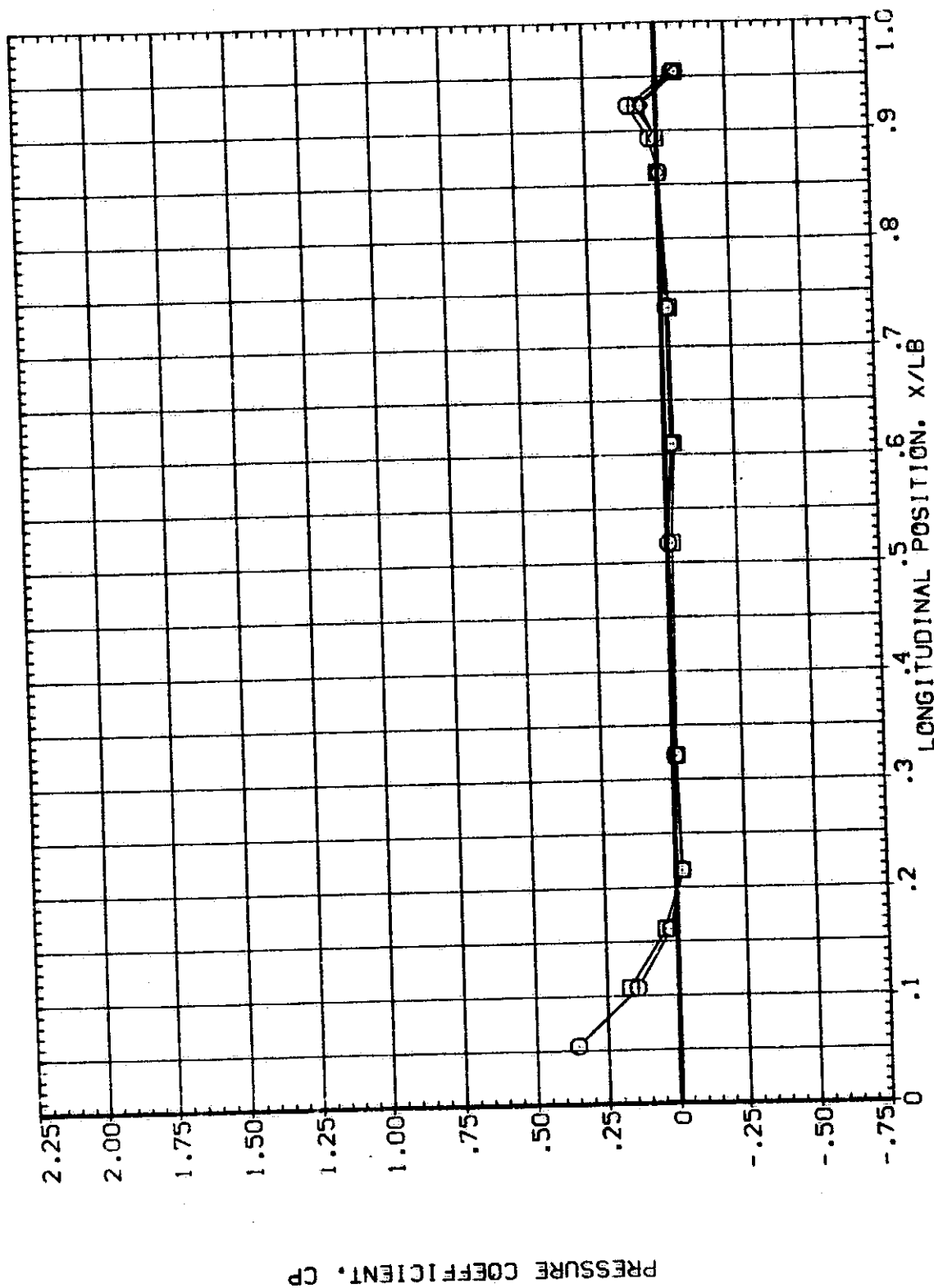


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA095)

SYMBOL    THETA    ALPHA    MACH  
 ○    45.000    7.800    3.480  
 □    67.500  
 ◇    90.000

PARAMETRIC VALUES  
 BETA    .000    OFFSET    .000  
 MOUNT    1.000    PHI    315.000

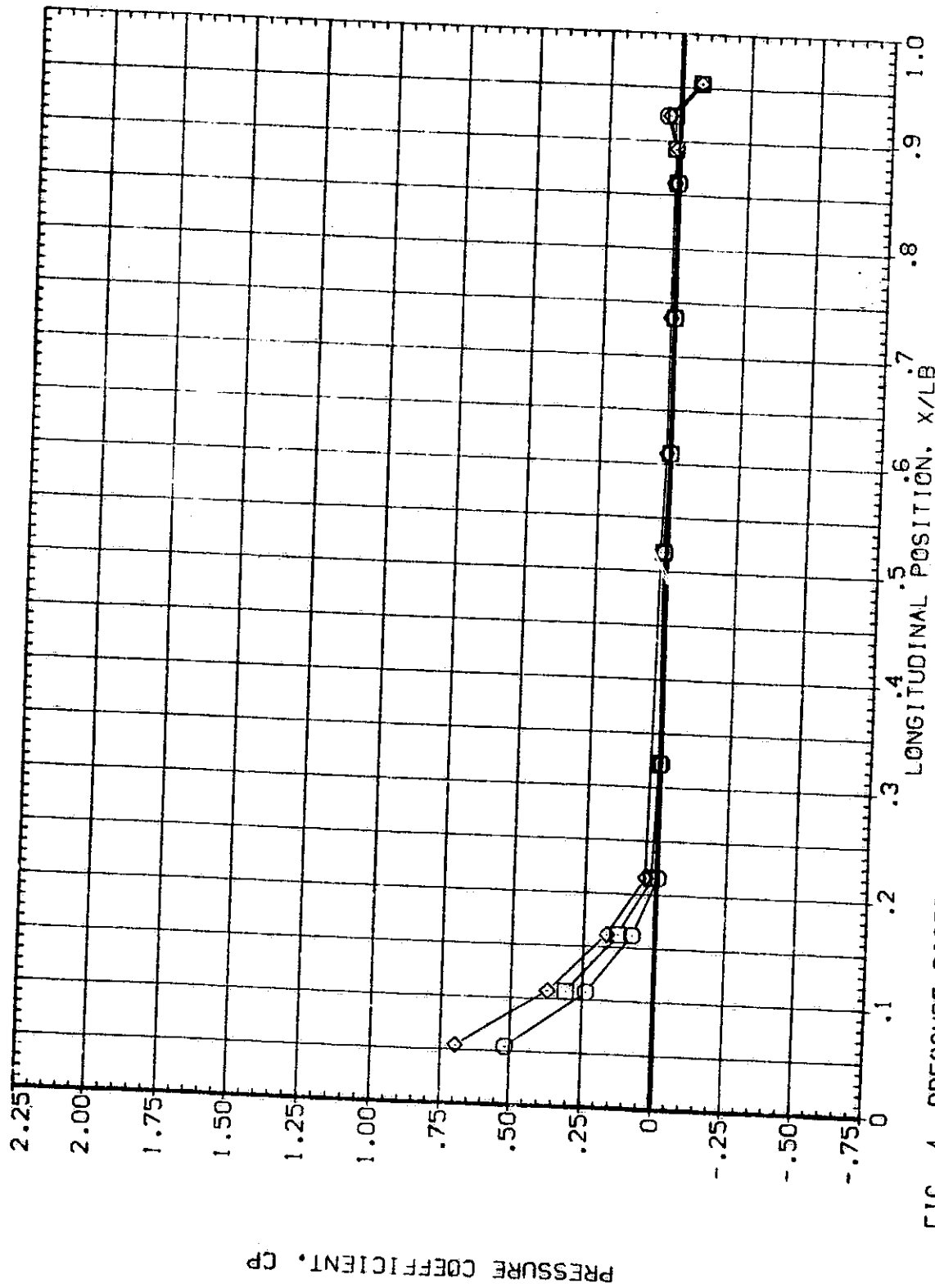


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

(P1A095)

SYMBOL

THETA  
112.500  
135.000  
157.500

ALPHA  
7.800

**MACH**  
**3.480**

PARAMETRIC VALUES	
.000	OFFSET
1.000	PHI

BETA	.000	OFFSET	.000
AMOUNT	1.000	PHI	315.000

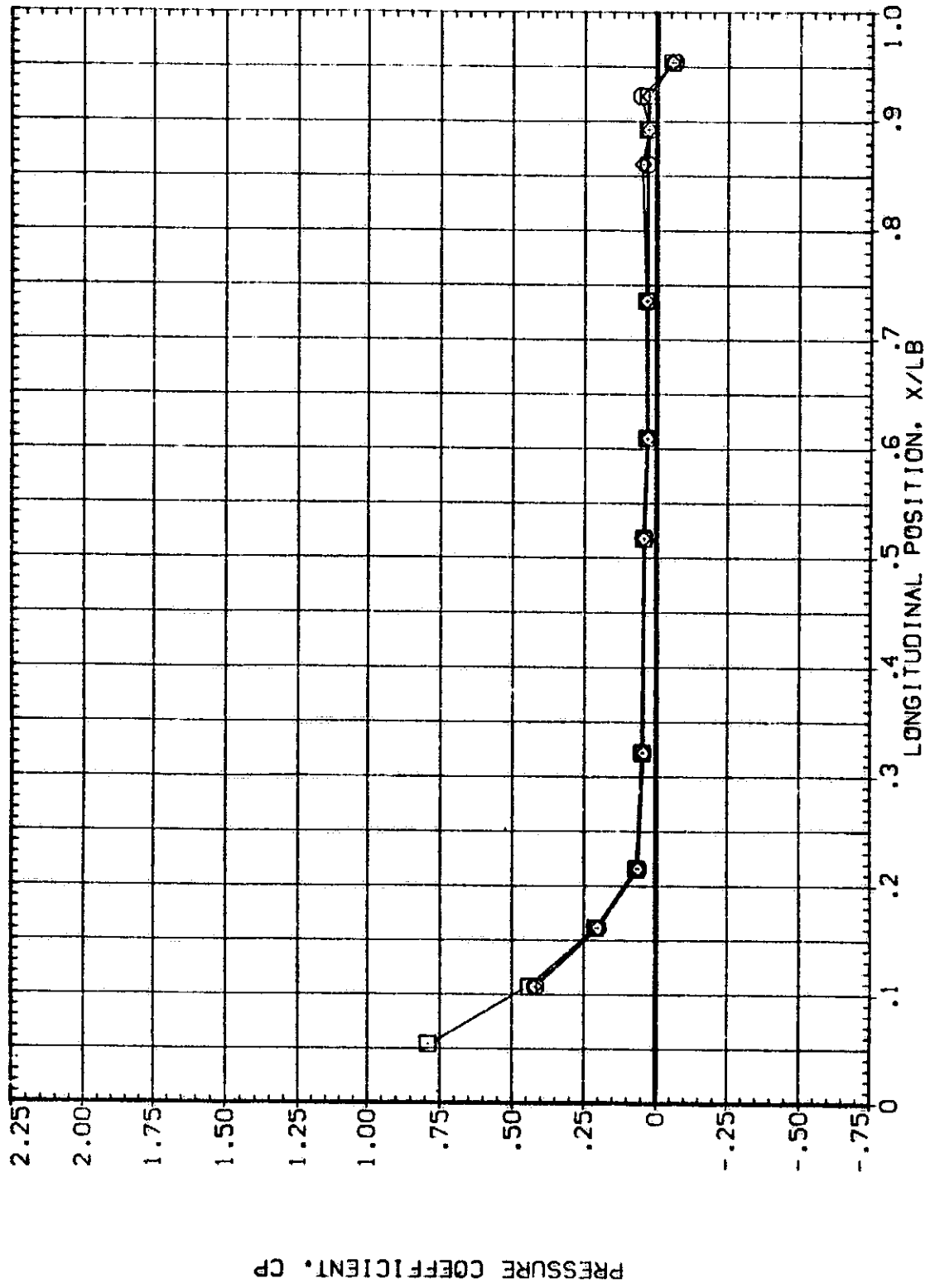


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES
○	180.000	7.800	3.480	BETA .000 OFFSET .000
□	202.500			MOUNT 1.000 PHI 315.000
◇	225.000			

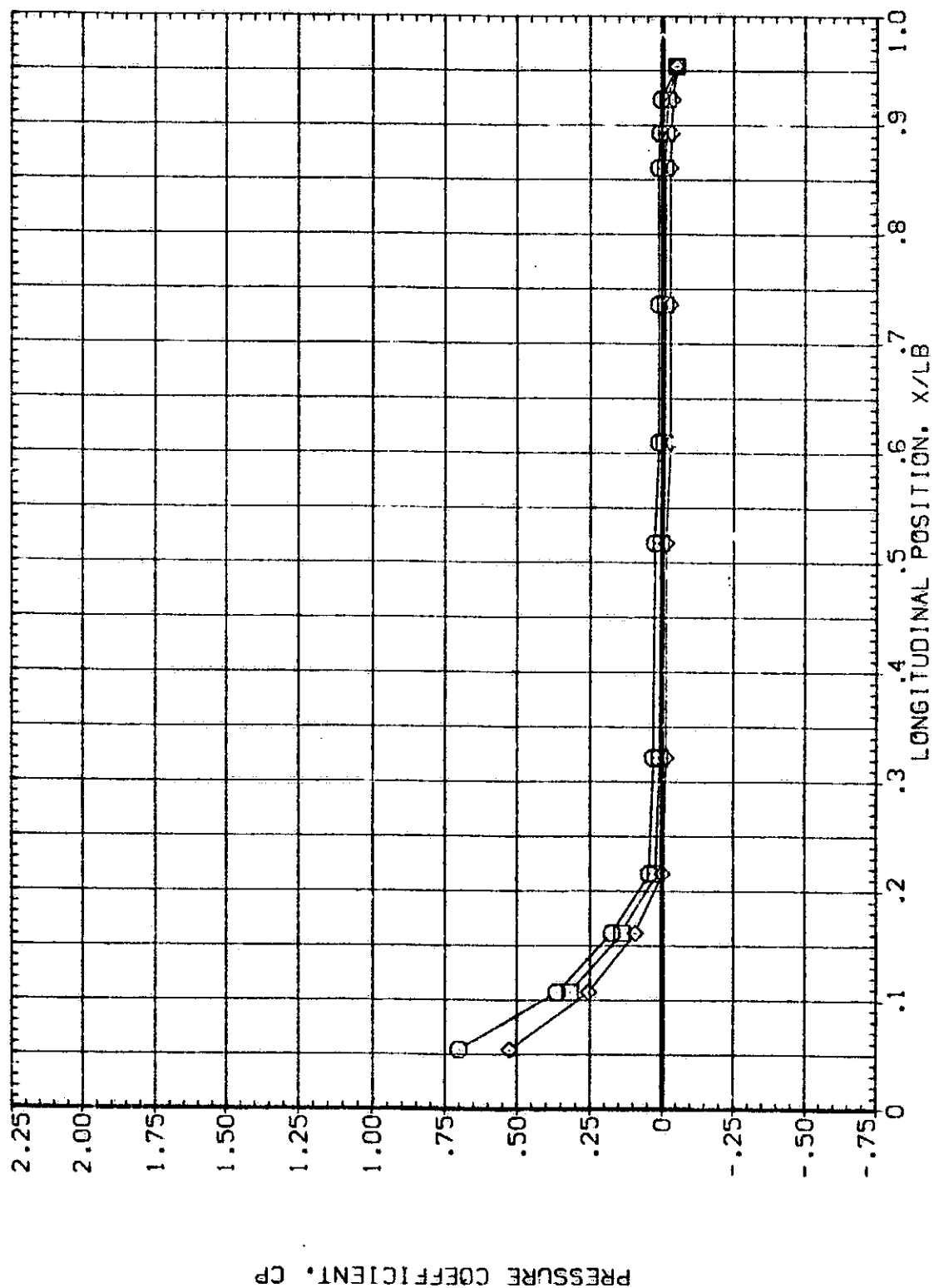


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA095)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	247.500	7.800	3.480	.000	.000	.000
◇	270.000			1.000		315.000
◇	292.500					

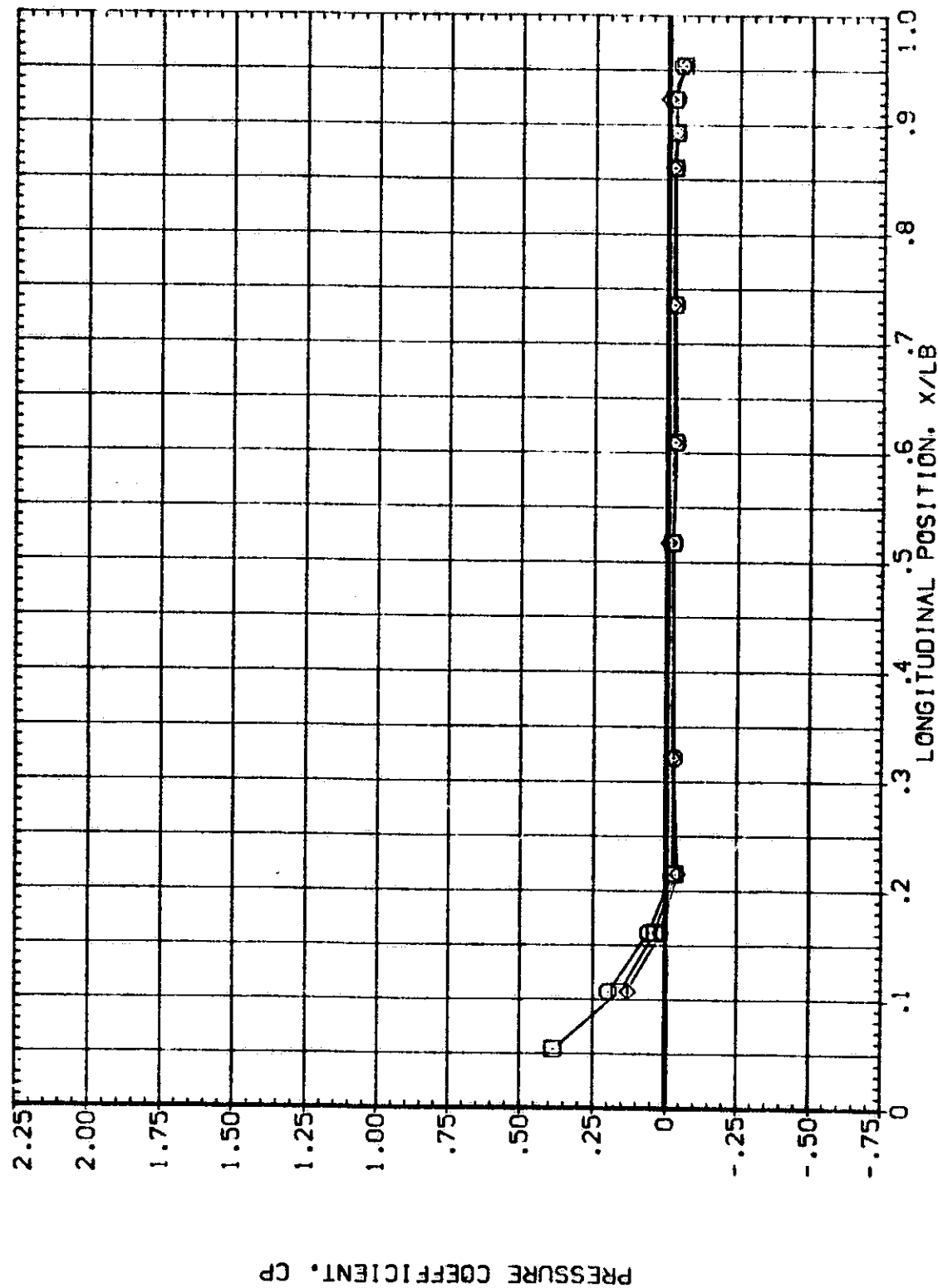


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA095)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 315.000  
 326.000  
 346.000

ALPHA  
 7.800

MACH  
 3.480

PARAMETRIC VALUES  
 .000  
 .000  
 1.000  
 PHI

BETA  
 MOUNT  
 315.000

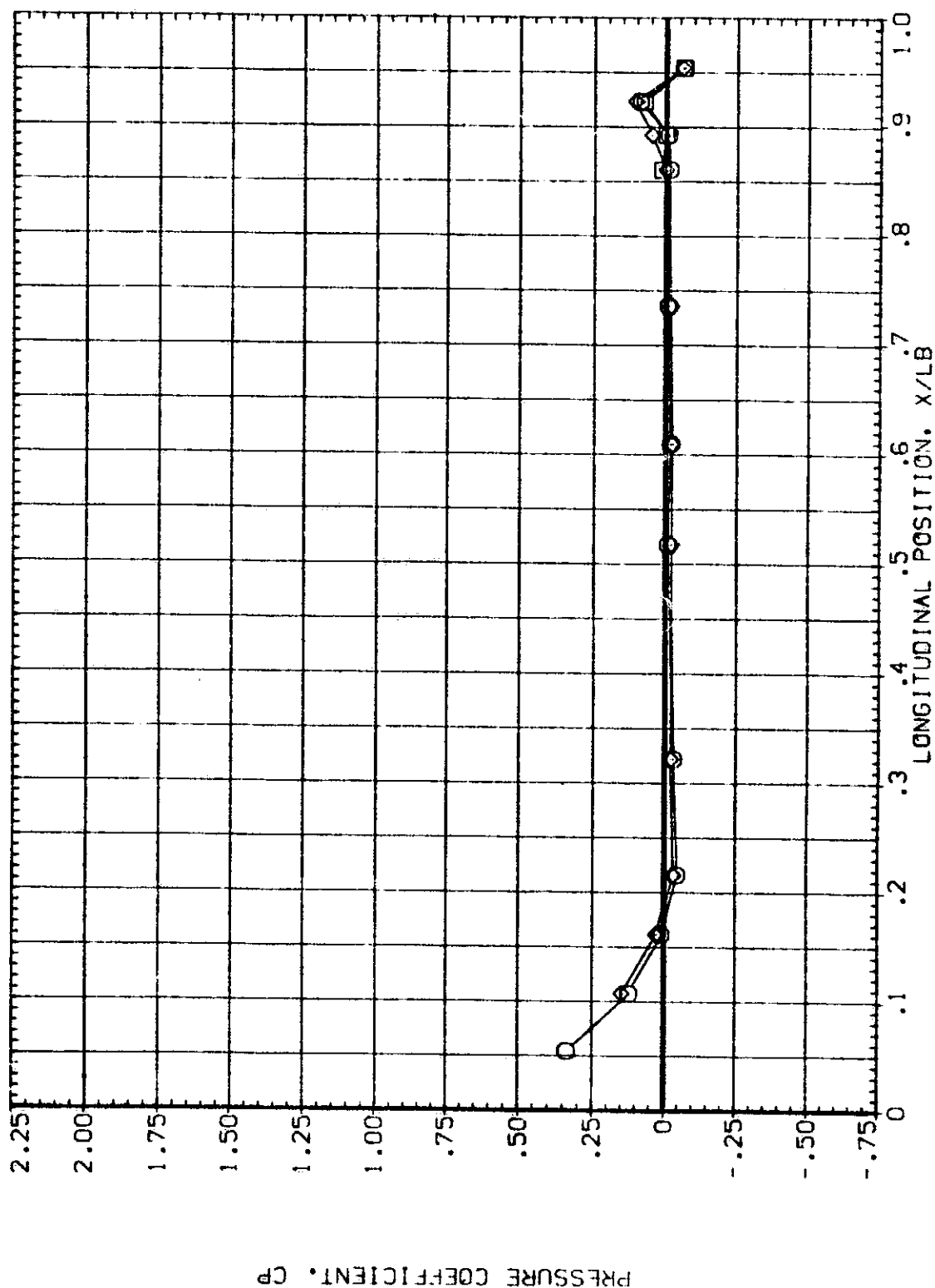


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA096)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	.000	12.500	3.480	.000	20.000	
◇	14.000			1.000		315.000
◇	24.000					

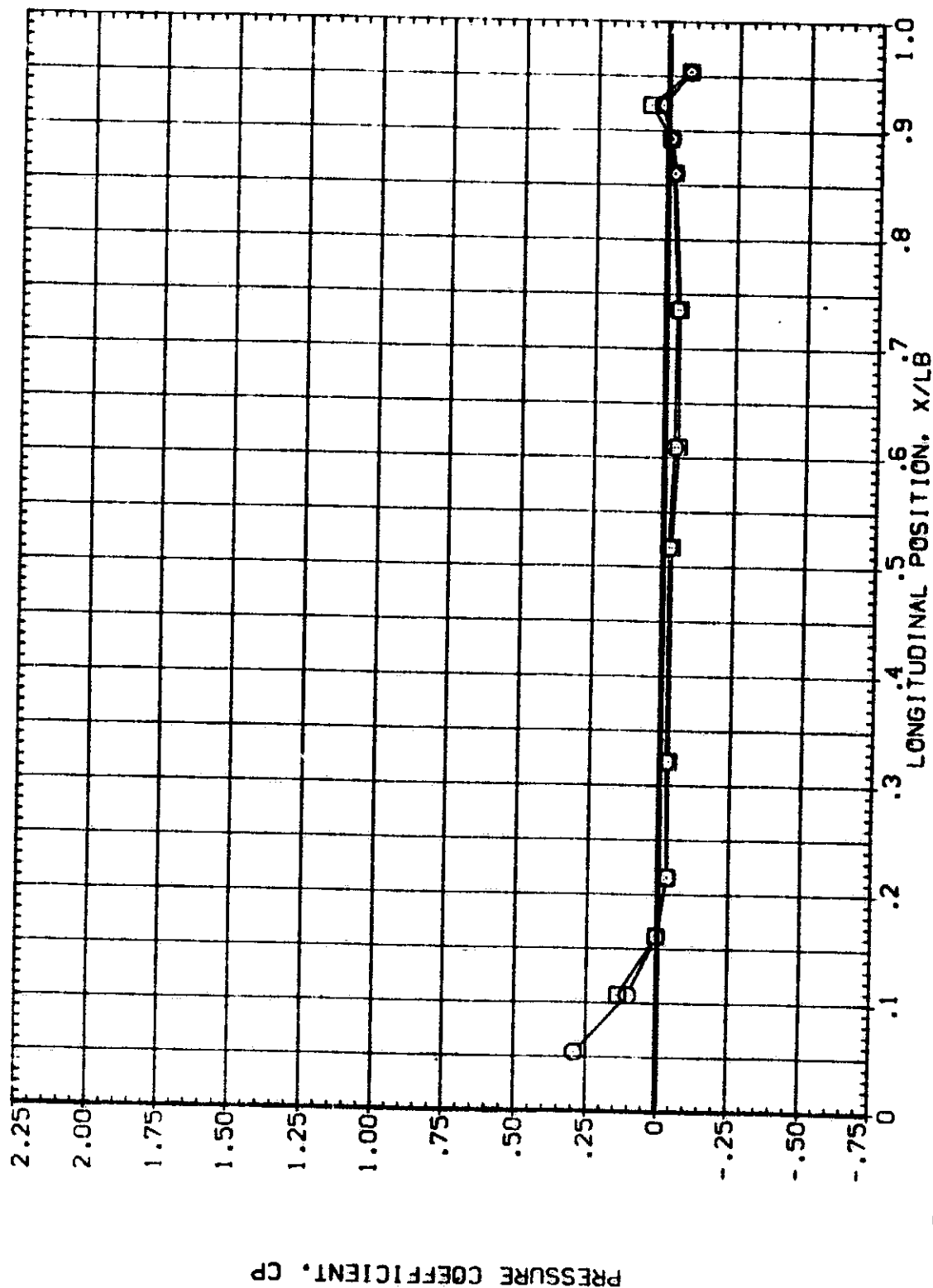


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA096)

SYMBOL  
 ○ □ ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 12.500  
 3.490

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 20.000  
 315.000

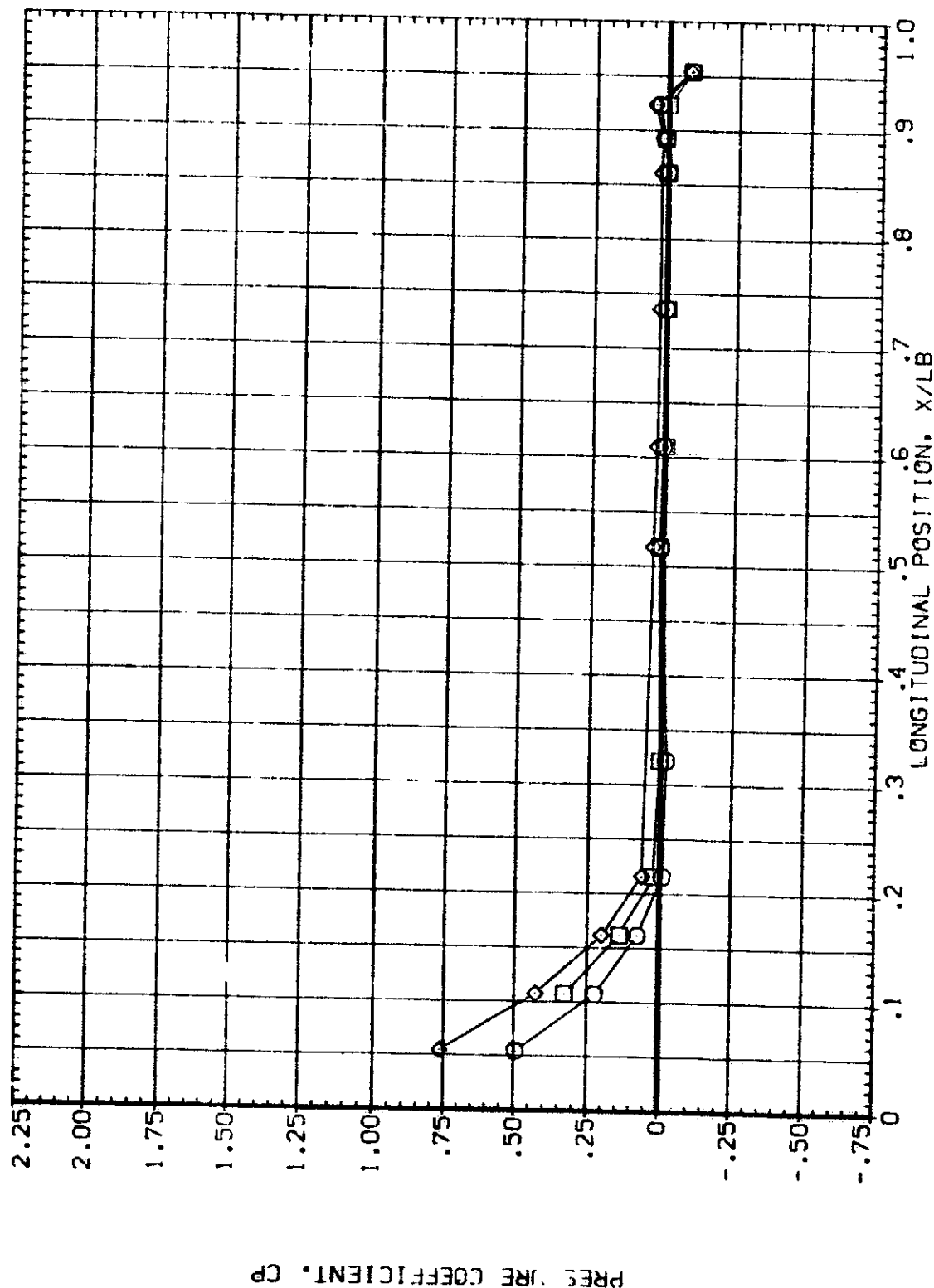


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

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PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 315.000

BETA  
 MOUNT

SYMBOL  
 112.500 THETA  
 135.000 ALPHA  
 157.500 MACH  
 3.480

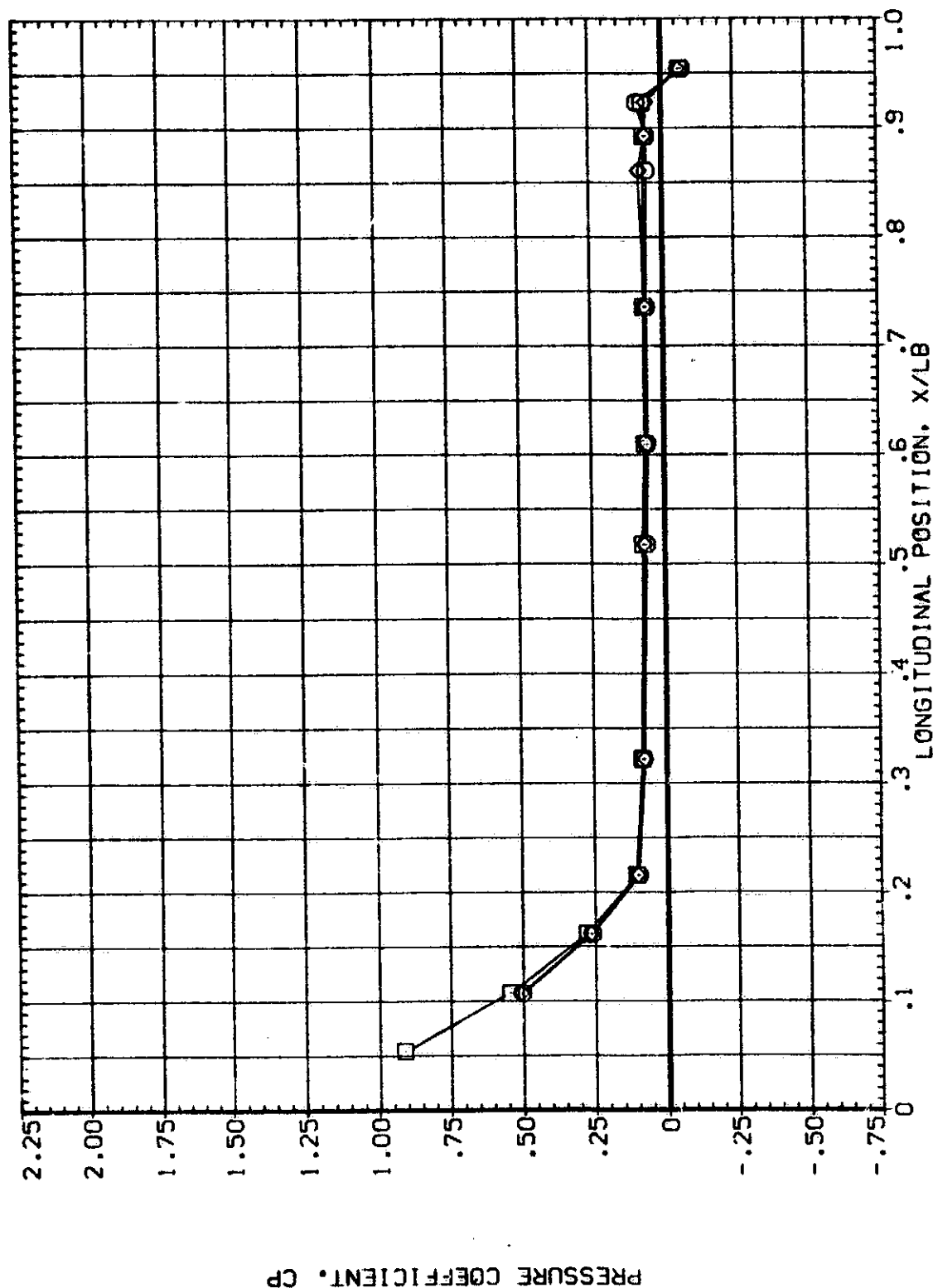


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA096)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	.000	OFFSET
□	180.000	12.500	3.480	1.000	PHI	20.000
◇	202.500					315.000
◇	225.000					

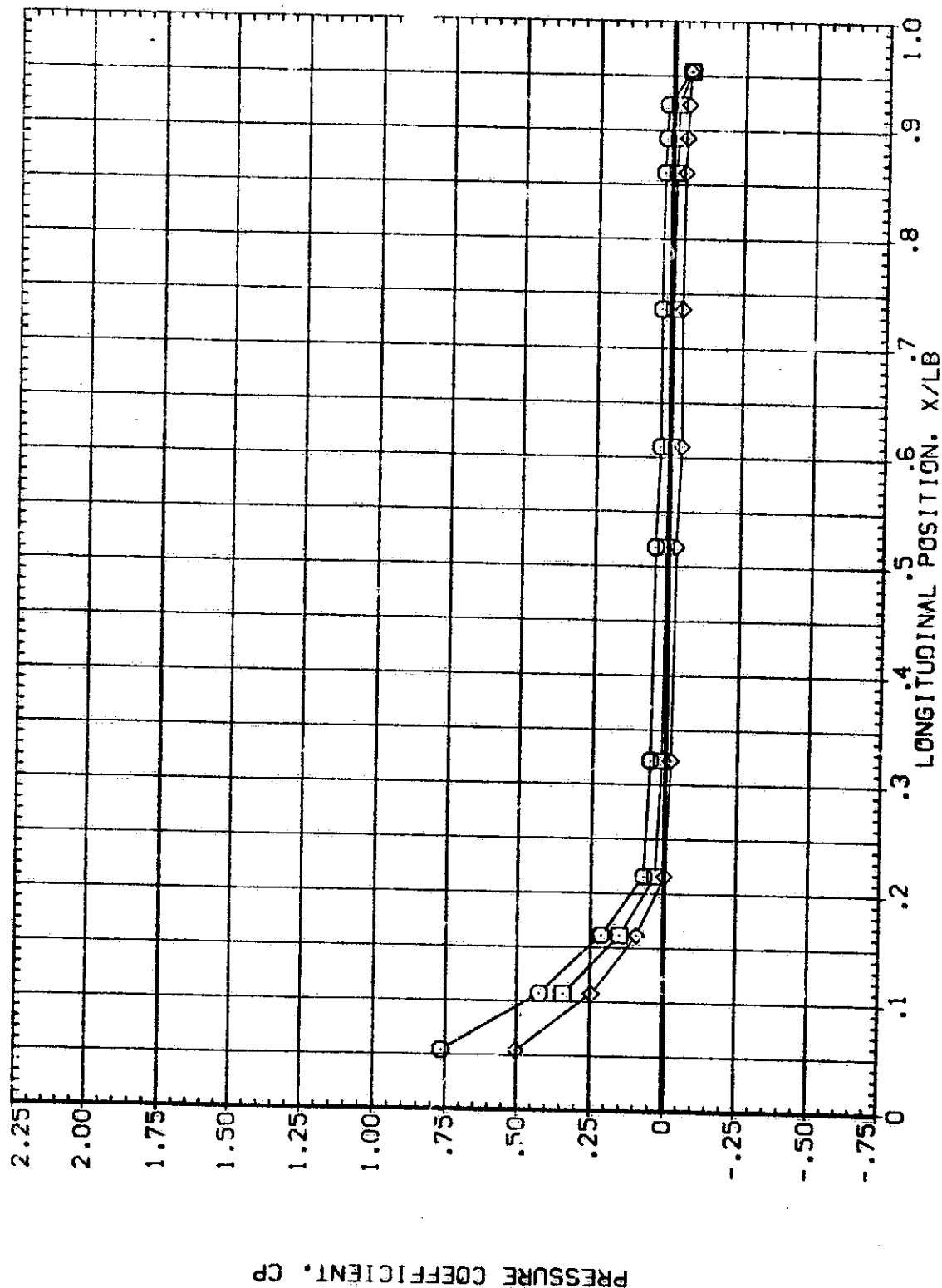


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



(PIA096)

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL  
◇  
□

THETA  
247.500  
270.000  
292.500

ALPHA  
12.500

MACH  
3.480

PARAMETRIC VALUES  
.000 CFFSET  
1.000 P-1

20.000  
315.000

BETA  
MOUNT

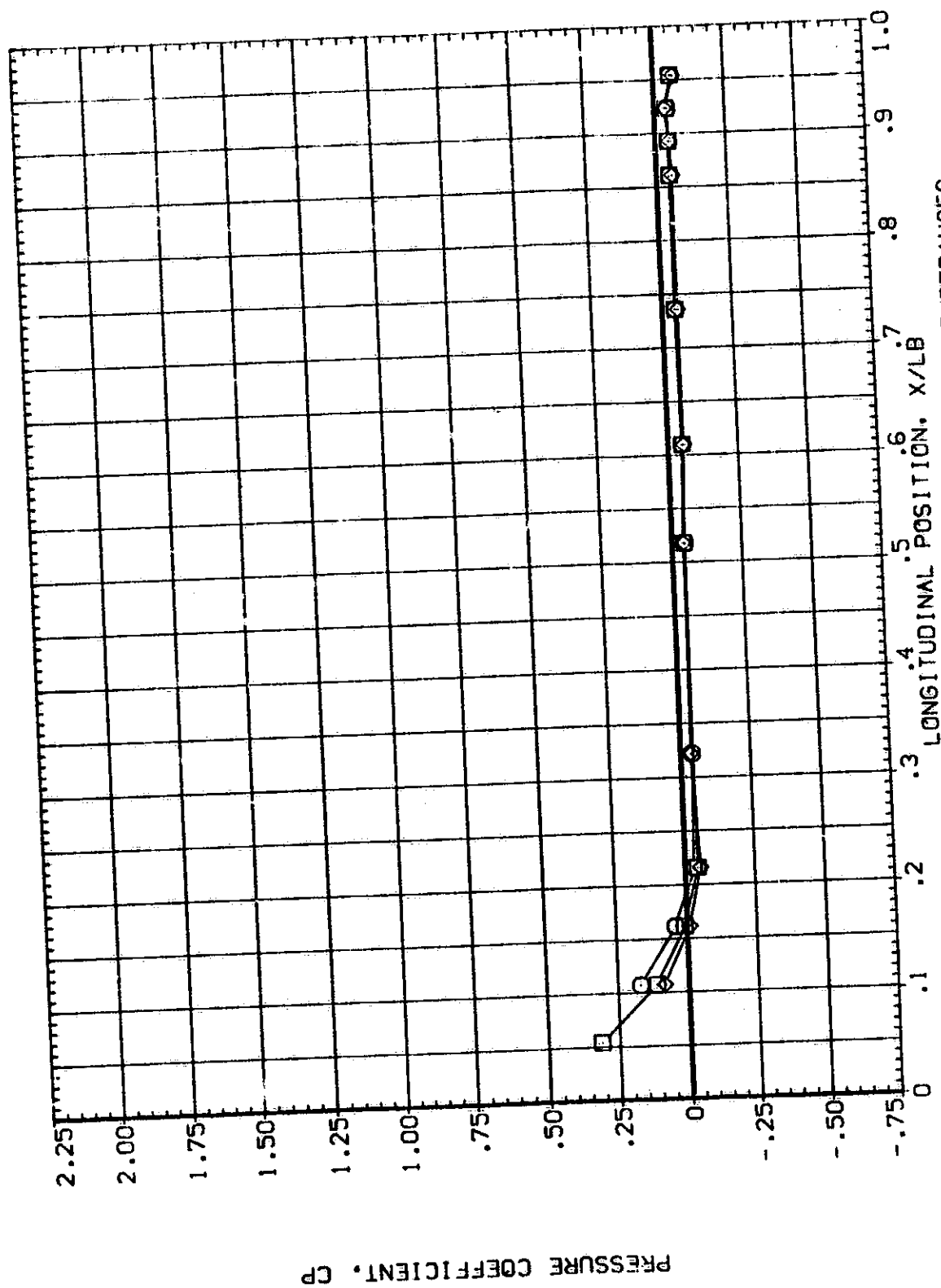


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

PARAMETRIC VALUES  
 .000 OF SET  
 1.000 PHI  
 20.000  
 315.000

BETA  
 MOUNT

SYMBOL  
 315.000  
 326.000  
 346.000

THETA  
 ALPHA  
 MACH  
 12.500  
 3.460

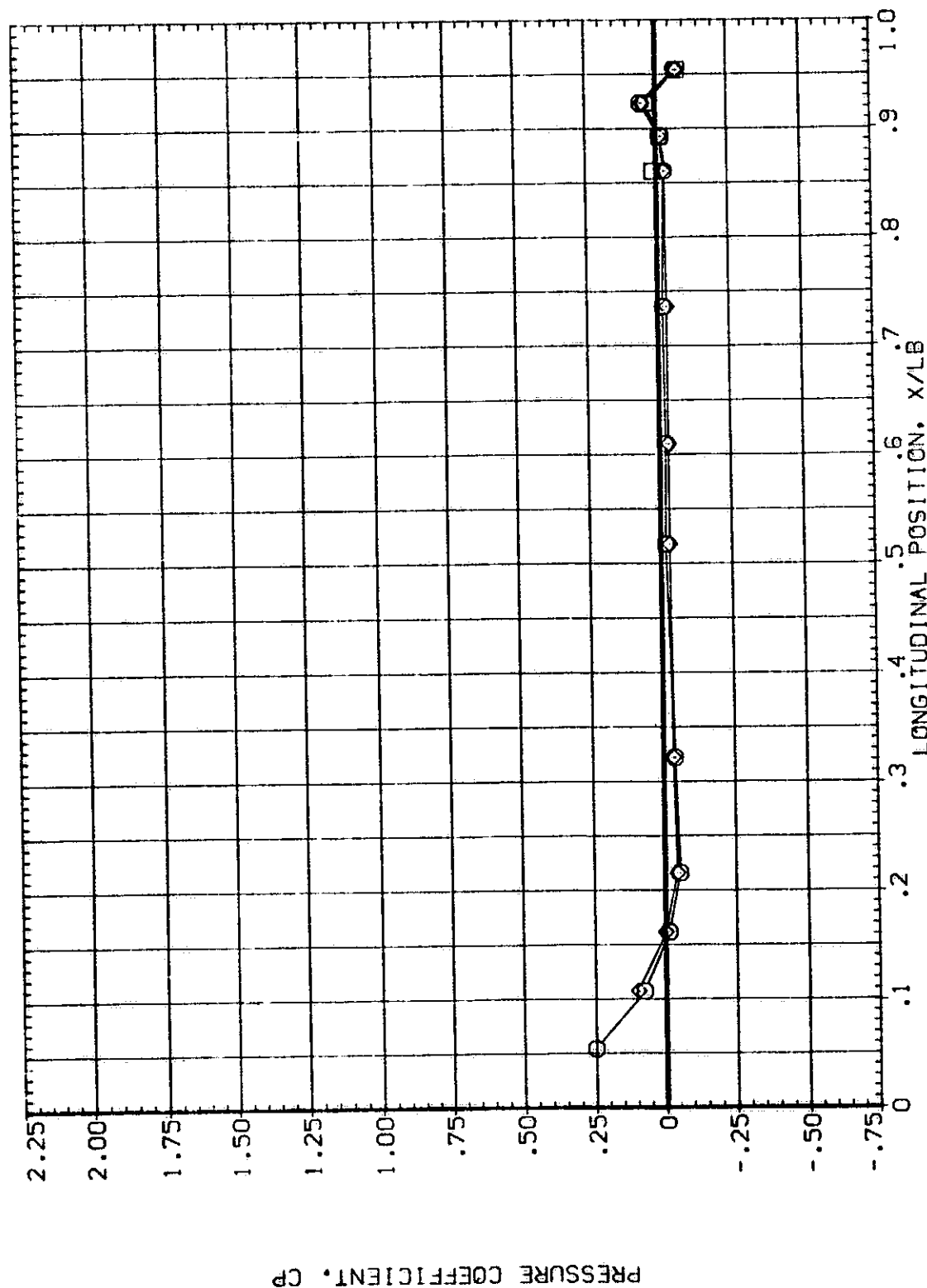


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (1A-2F) MCR0200 EXTERNAL TANK, T1 (PIA097)

SYMBOL  
○ □ ◇

THETA .000  
14.000  
24.000

ALPHA 16.560

MACH 3.480

PARAMETRIC VALUES  
.000 .000  
1.000 PHI

BETA  
MOUNT 20.000  
315.000

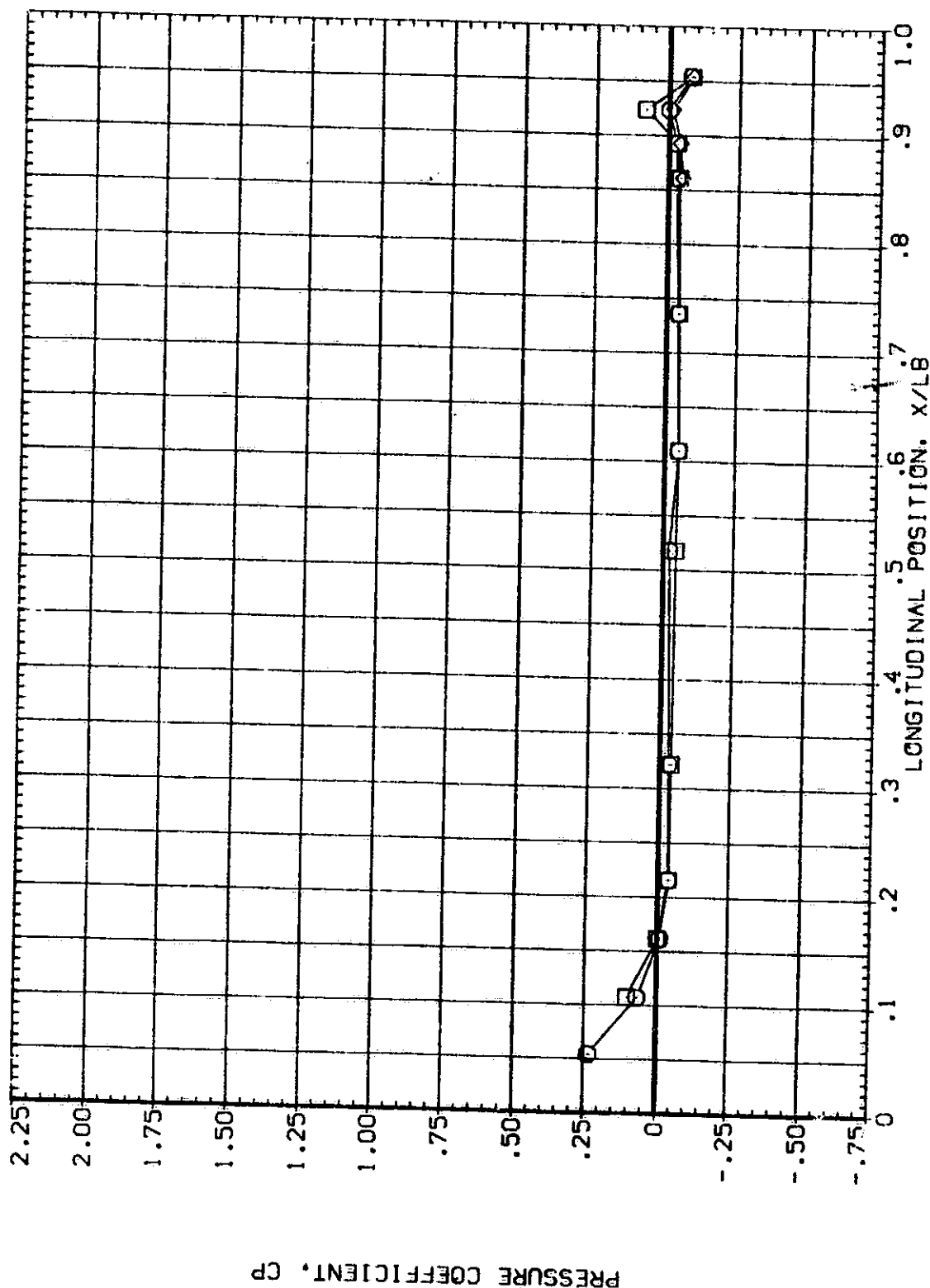


FIG. 4 .PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

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MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA097)

SYMBOL

THETA  
45.000  
67.500  
90.000

ALPHA  
16.560

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT  
1.000  
PHI  
20.000  
315.000

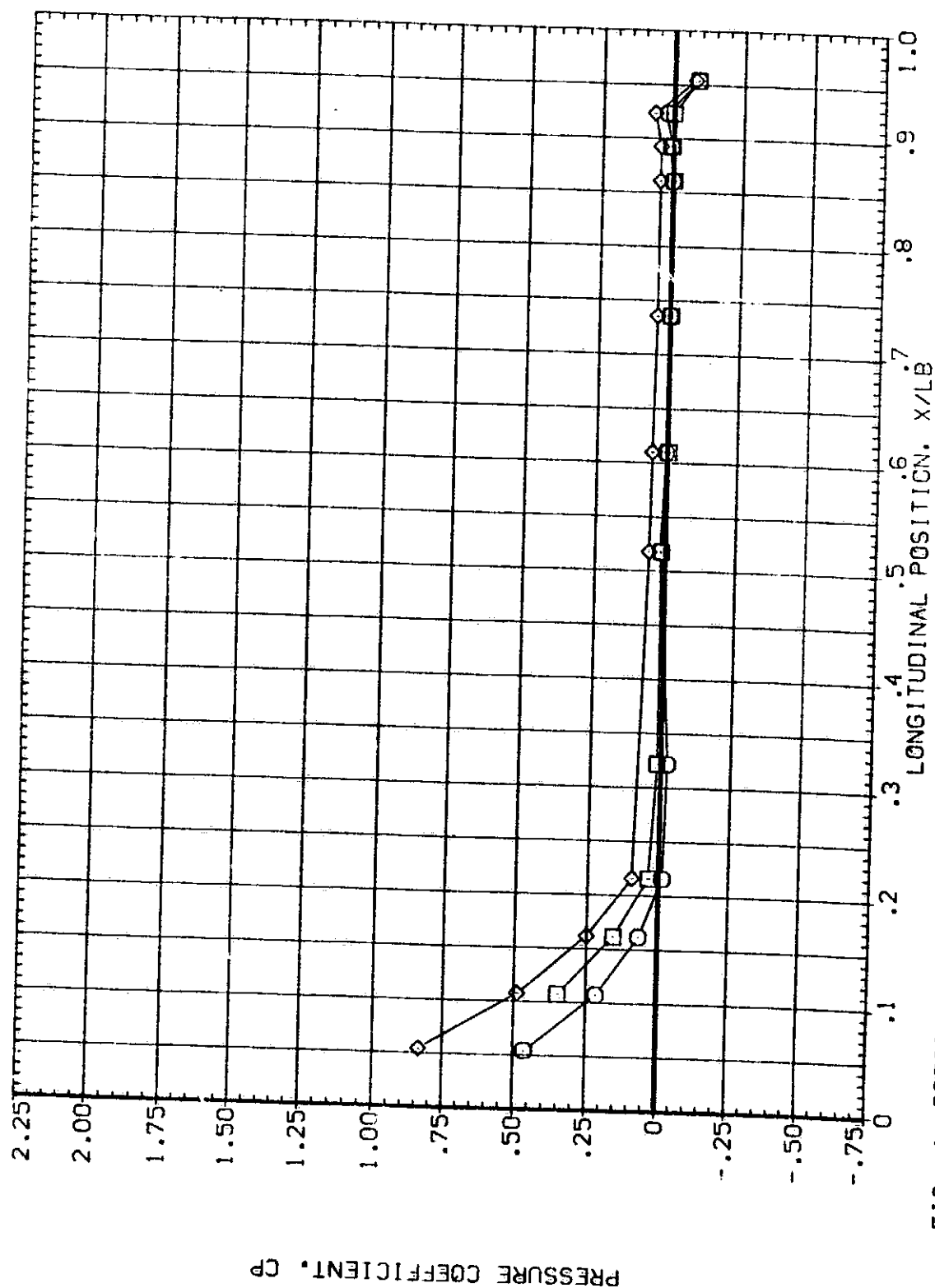


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

6

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK. T1 (P1A097)

SYMBOL  
 ○  
 □  
 ◇

THETA  
 112.500  
 135.000  
 157.500

ALPHA  
 16.560

MACH  
 3.480

BEYA  
 MDUNT

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 315.000

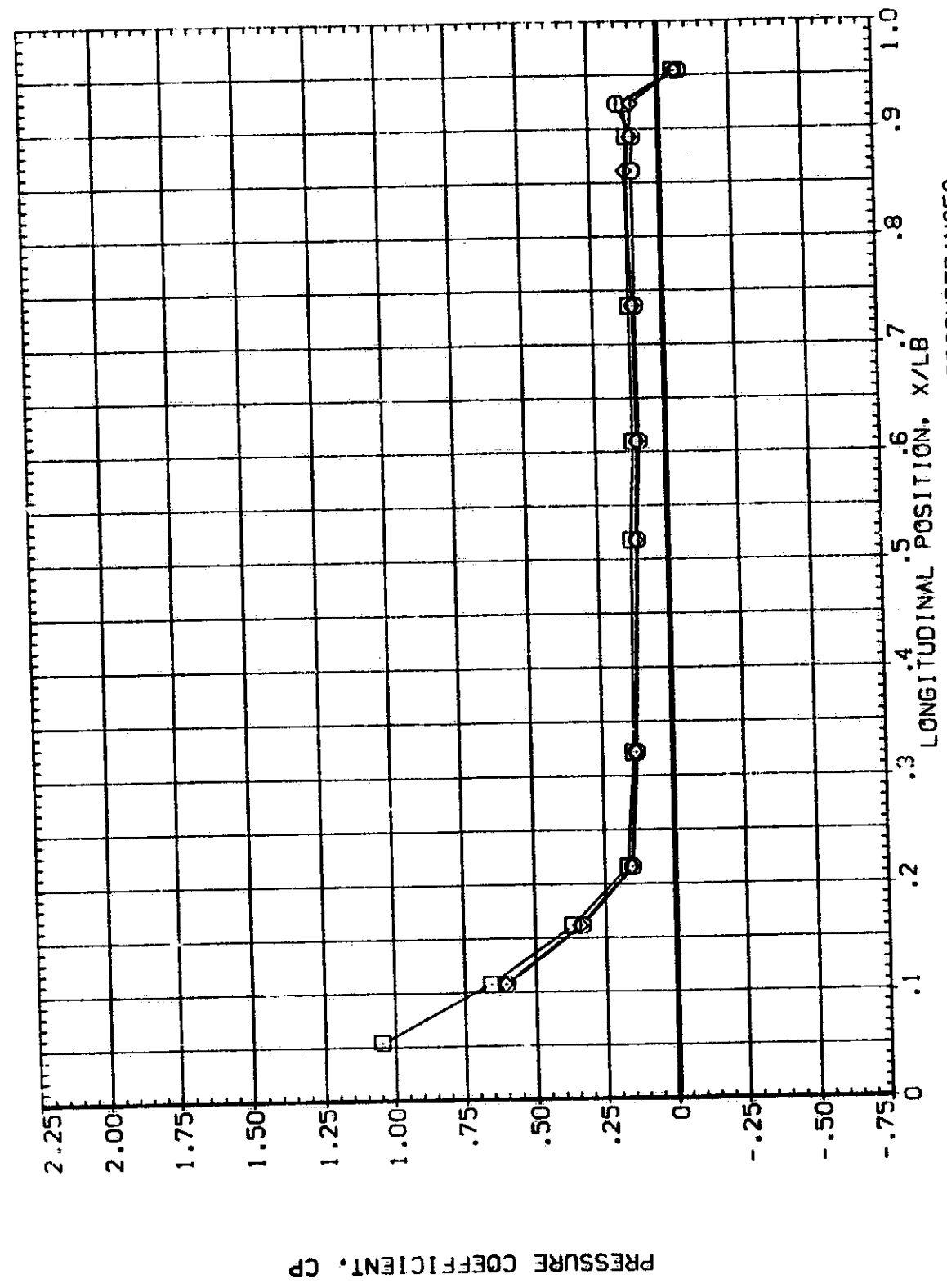


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL THETA ALPHA MACH  
 ○ 180.000 16.560 3.480  
 □ 202.500  
 ◇ 225.000

PARAMETRIC VALUES  
 BETA .000 OFFSET 20.000  
 MOUNT 1.000 PHI 315.000

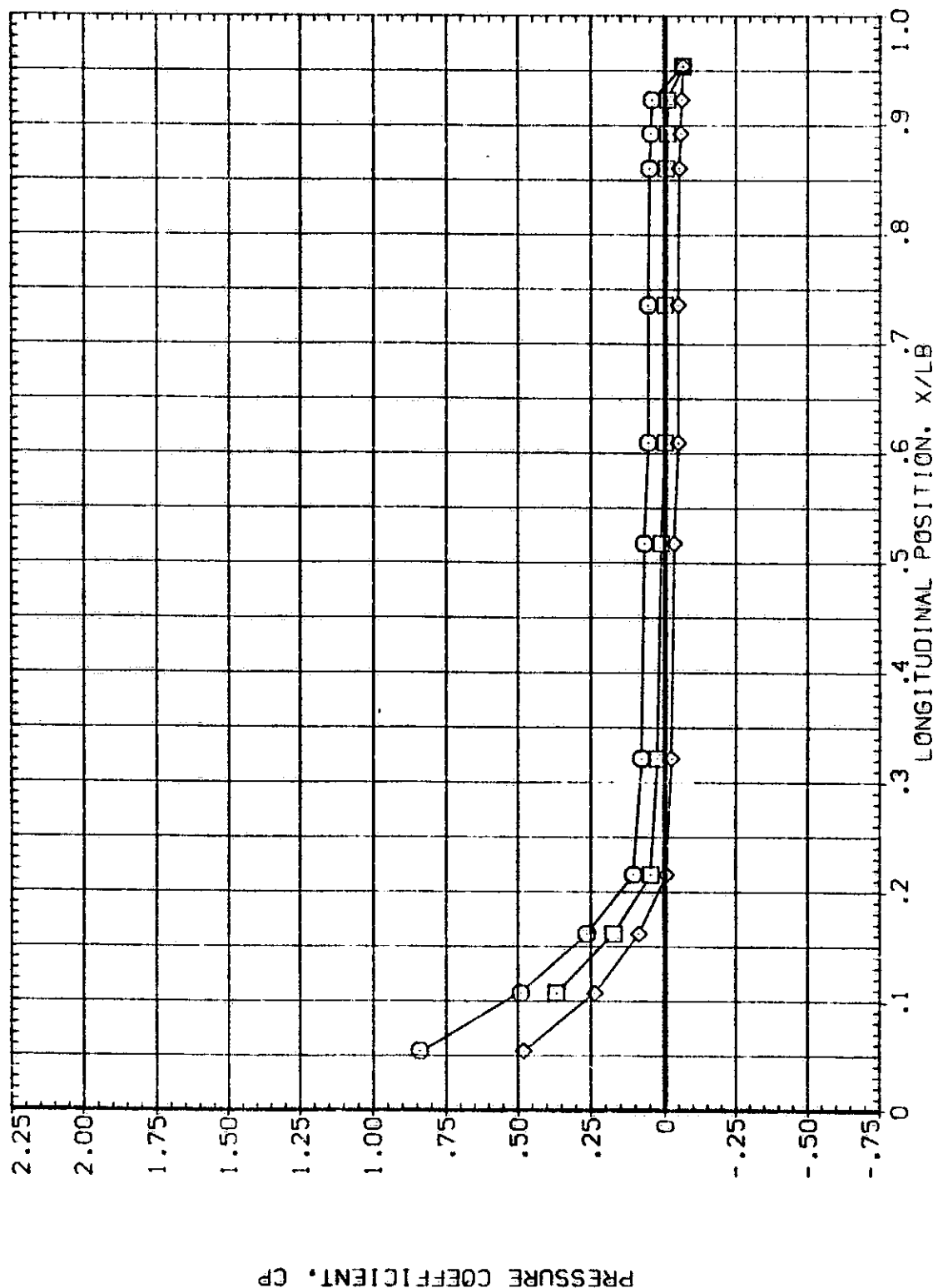


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A097)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	16.560	3.460	1.000	.000	20.000
□	270.000					315.000
◇	292.500					

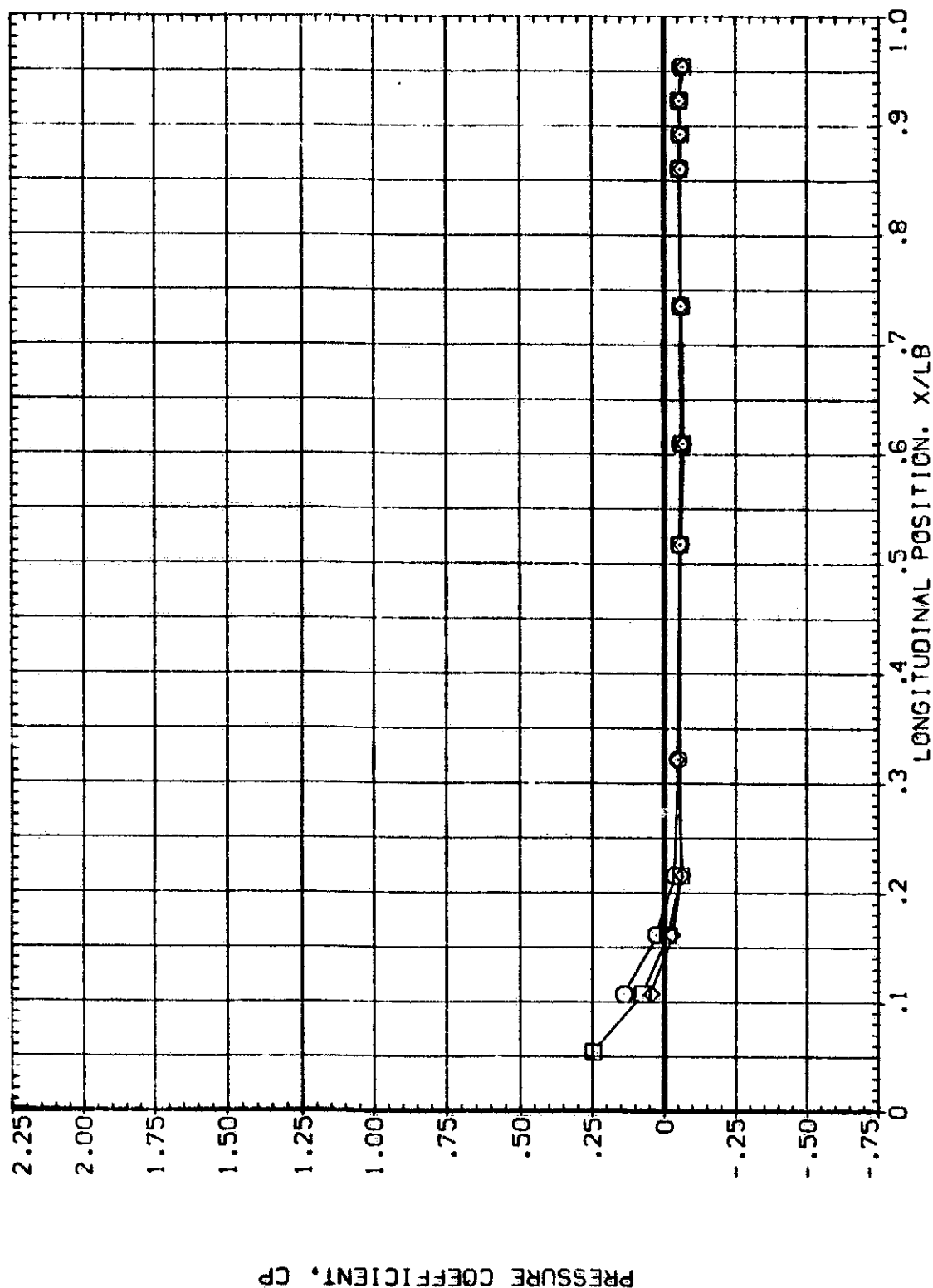


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

SYMBOL  
 □  
 ○  
 ◇

THETA 315.000  
 326.000  
 346.000  
 ALPHA 16.560  
 MACH 3.480

BETA .000  
 MOUNT 1.000  
 PARAMETRIC VALUES  
 OFFSET 20.000  
 PHI 315.000

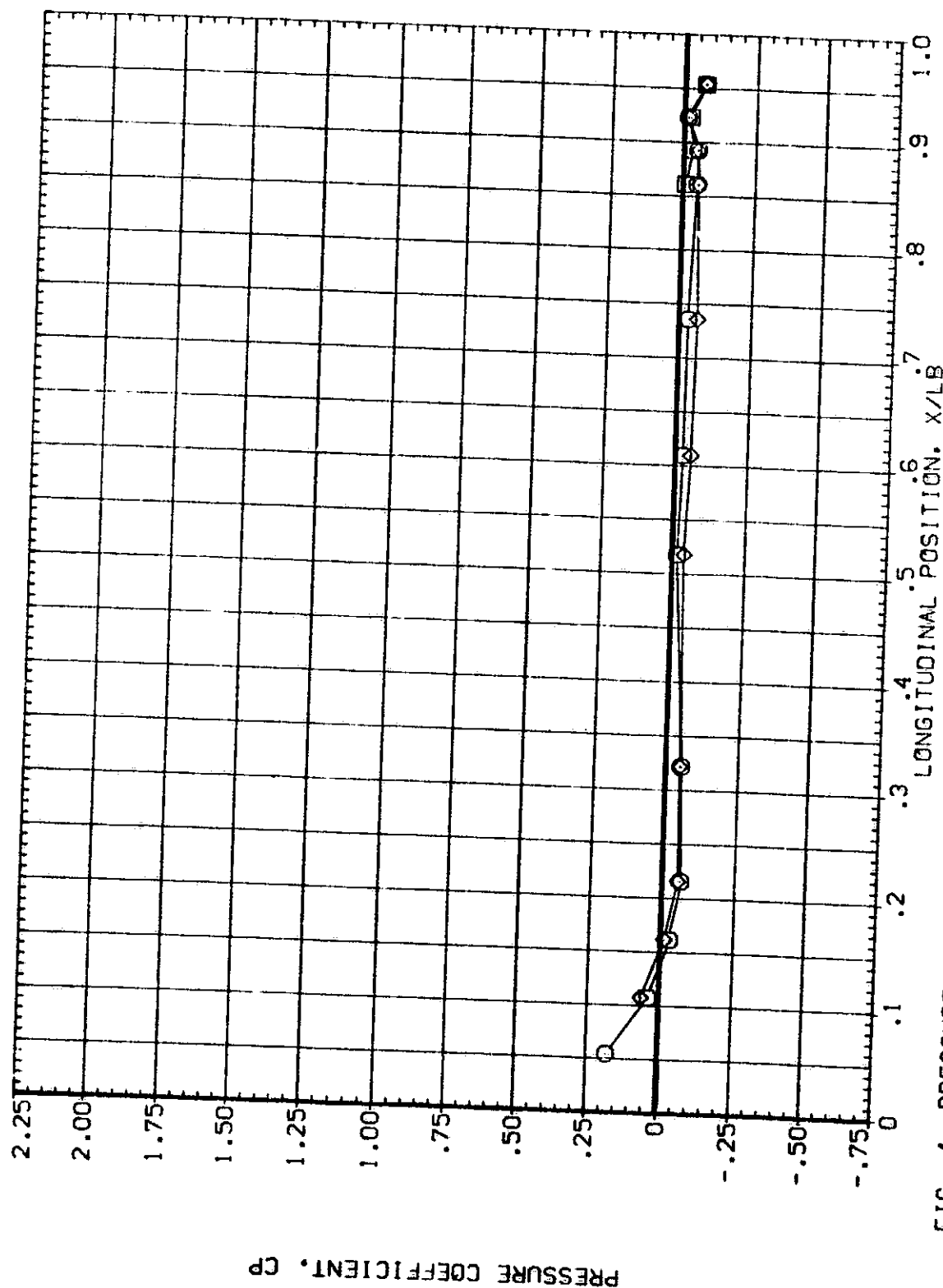


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A098)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES		
	.000	14.000	20.610	24.000	.000	3.480	BETA	OFFSET	PHI
□							MCUNT	1.000	315.000
◇								20.000	

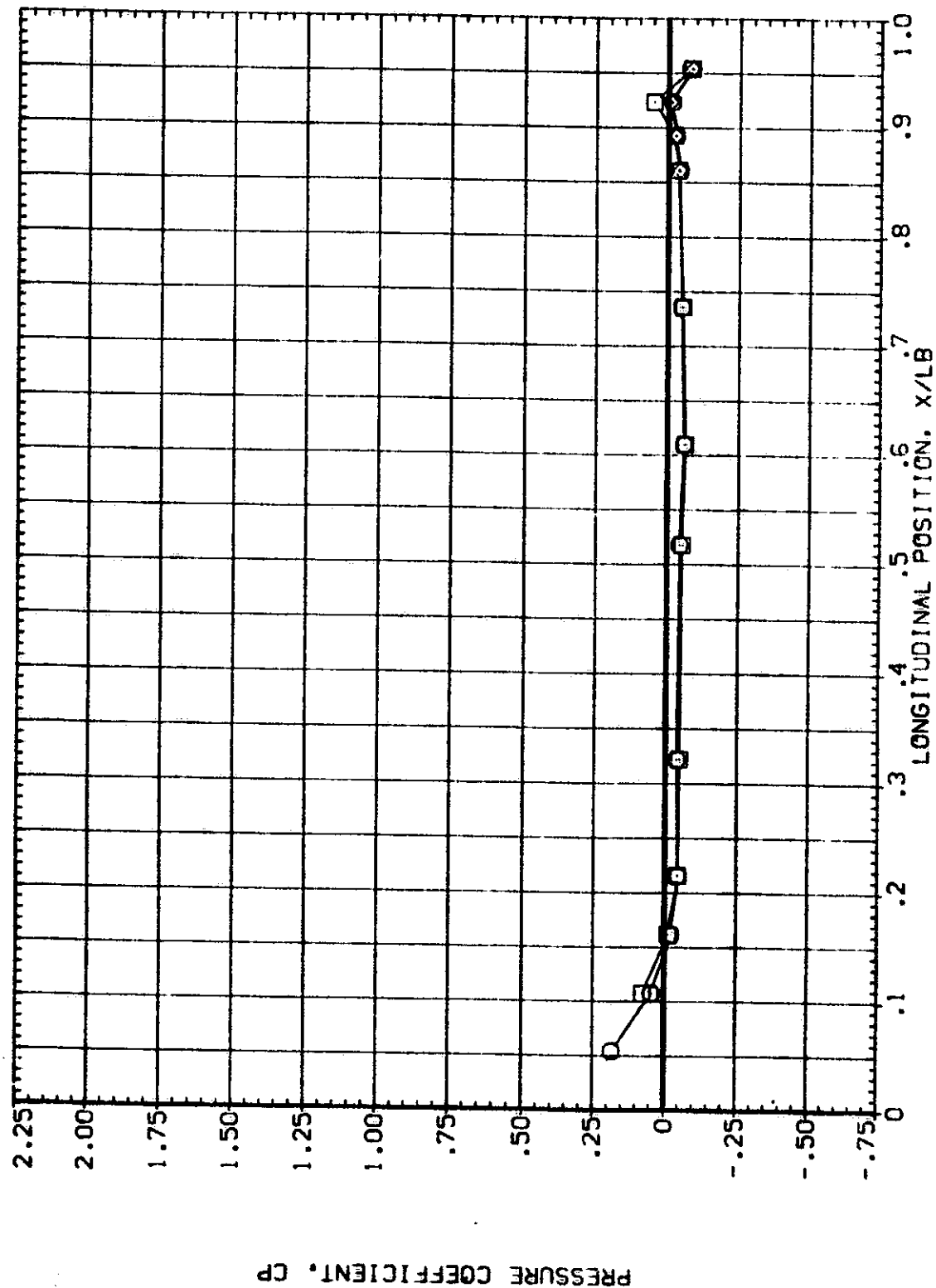


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
○ □ ◇

THETA  
45.000  
67.500  
90.000

ALPHA  
20.610

MACH  
3.480

BEYA  
MOUNT

PARAMETER VALUES  
.000 OFFSET  
1.000 PH  
20.000  
315.000

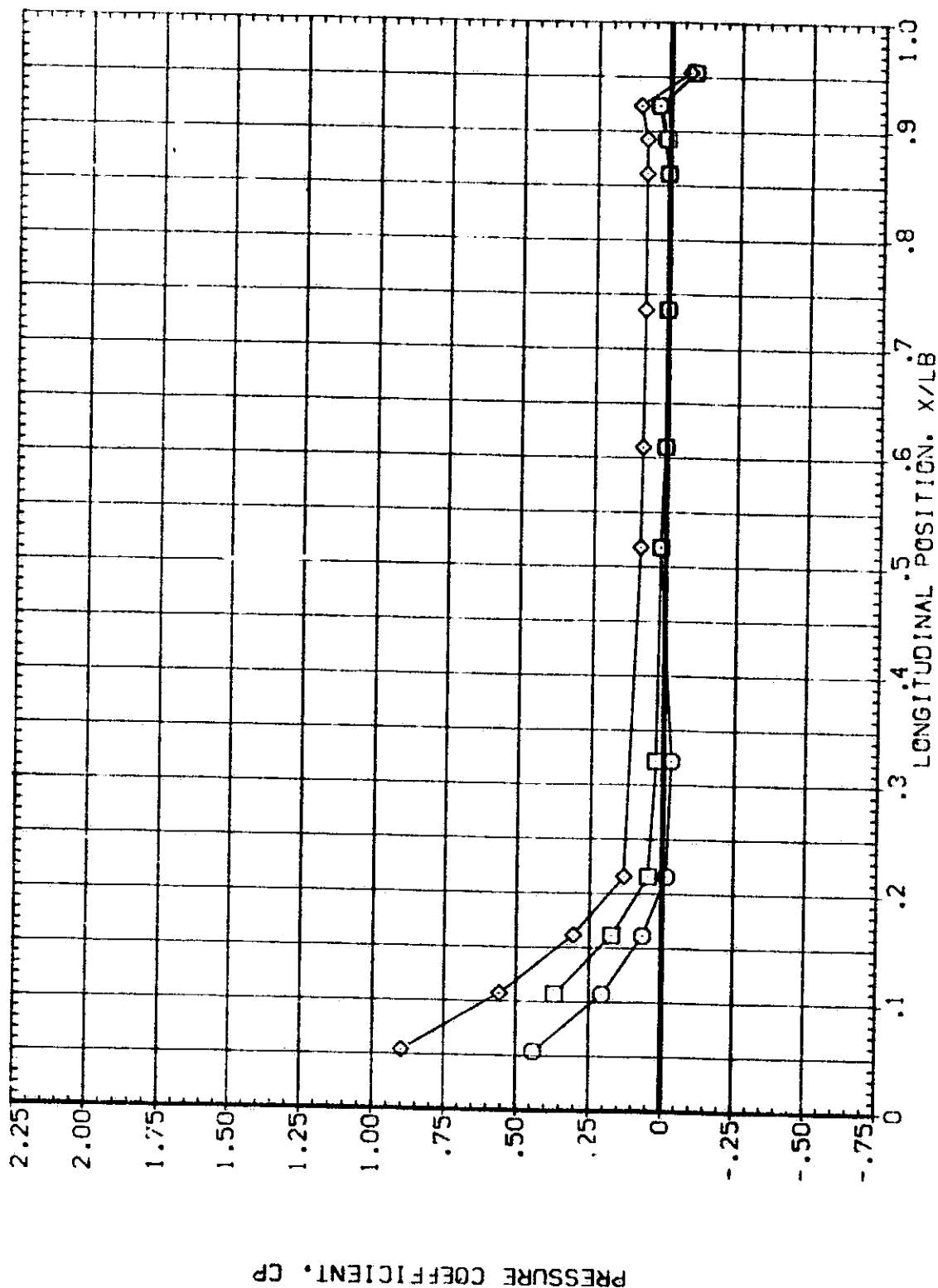


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

(PIA098)

SYMBOL

□ ◇

THETA  
112.500  
135.000  
157.500

ALPHA  
20.610  
NACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000  
OFFSET  
PHI  
20.000  
315.000

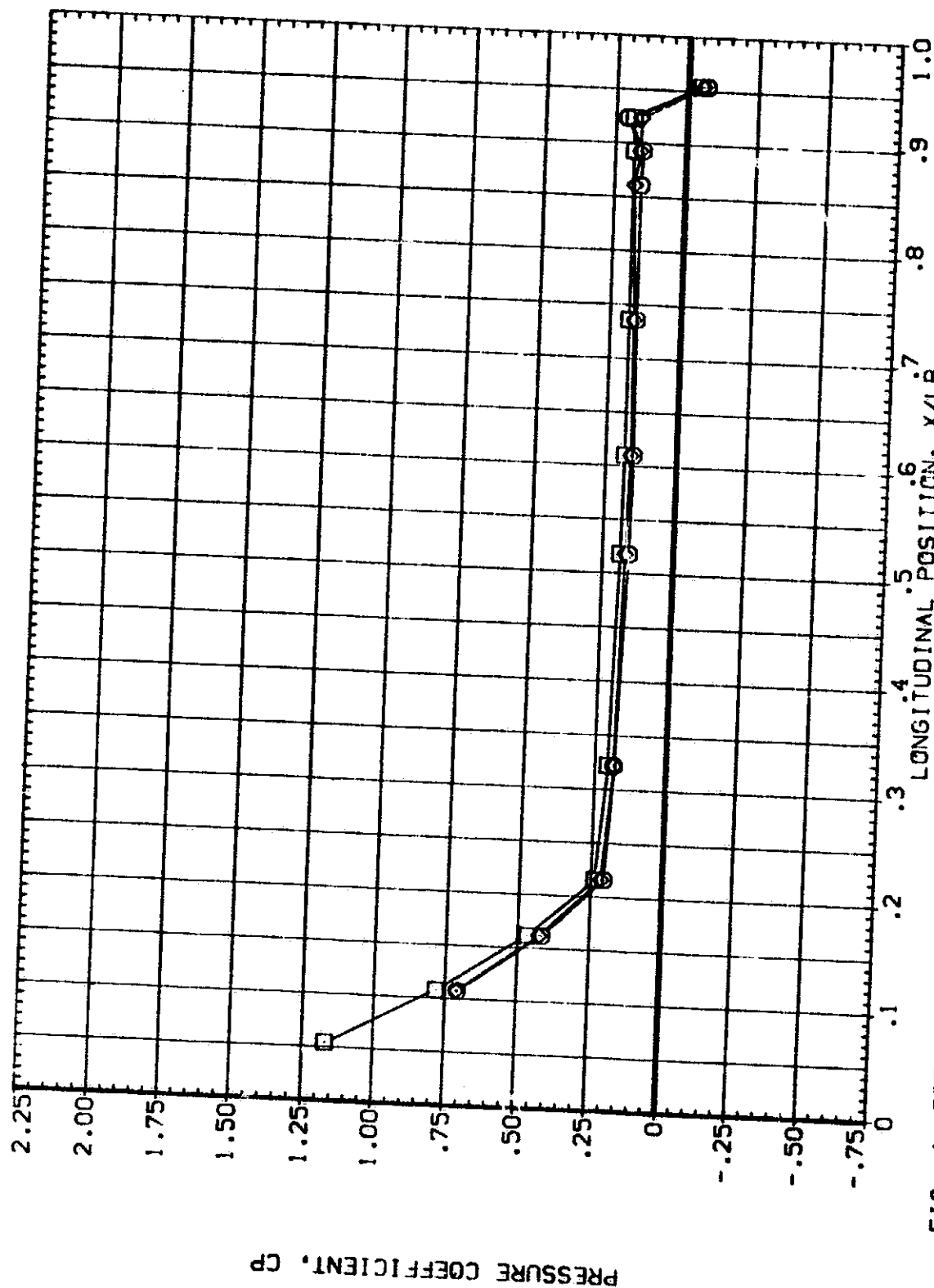


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



## SYMBOL

225.000  
202.500  
180.000  
VLS

ALPHA  
20.610

**MACH**  
**3.490**

### PARAMETRIC VALUES

BETA	.000	OFFSET	20.000
MOUNT	1.000	PHI	315.000

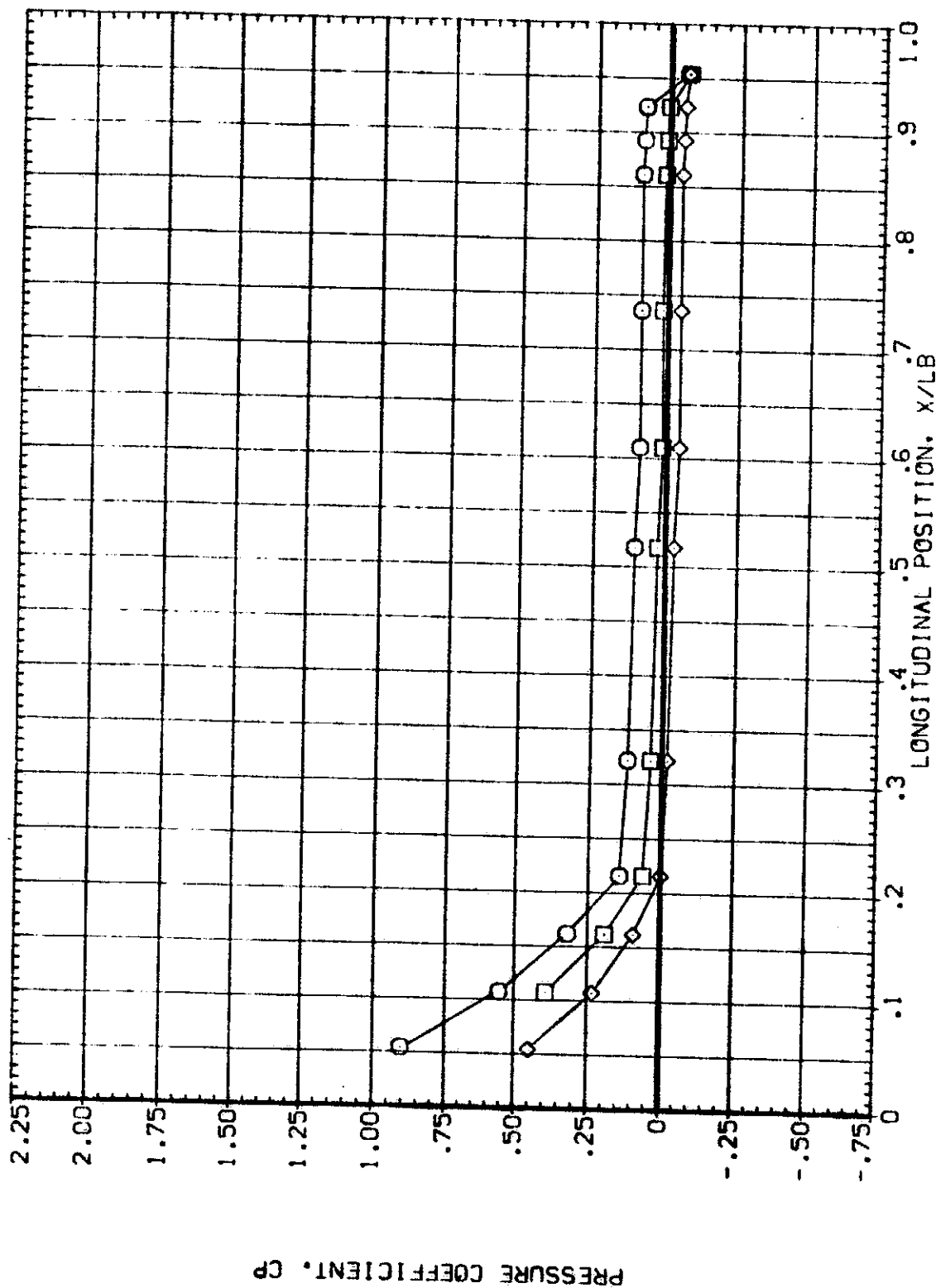


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A098)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
□	247.500	20.610	3.480	.000	1.000	20.000
◇	270.000					315.000
	292.500					

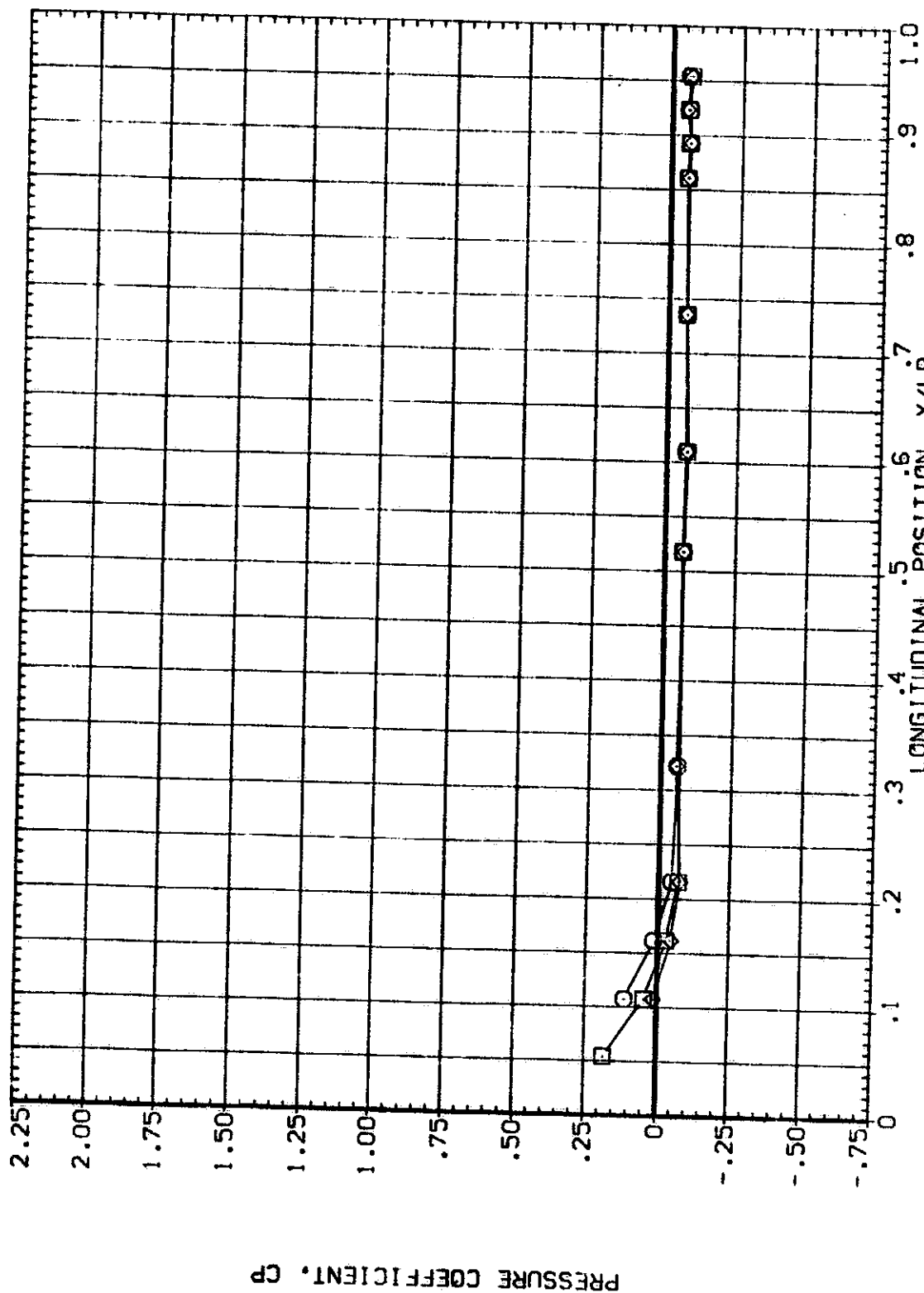


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA098)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	315.000		20.610		3.480					
	326.000						BETA	.000	OFFSET	20.000
	346.000						HDUNT	1.000	PHI	315.000

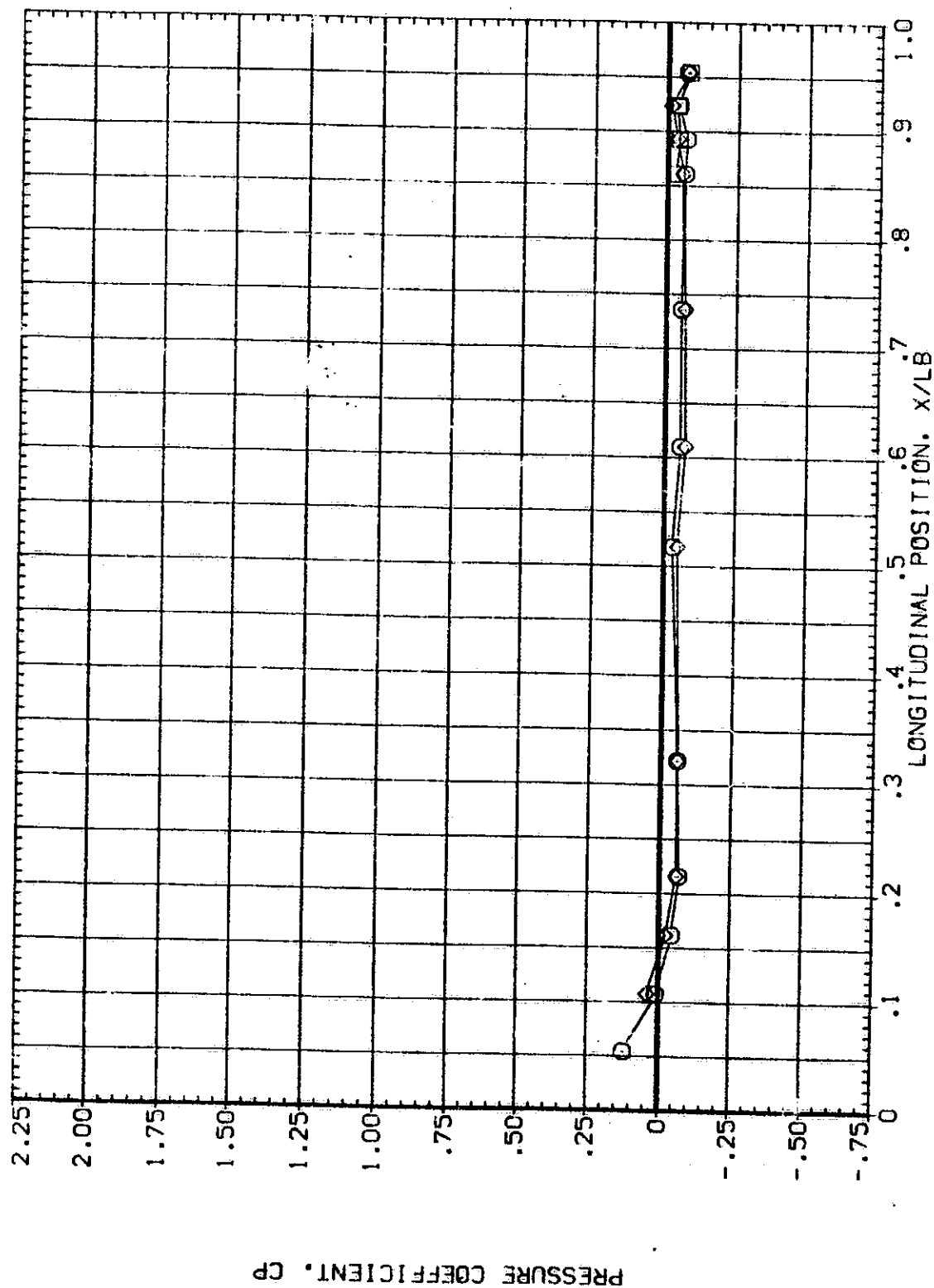


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A099)

SYMBOL THETA ALPHA MACH  
 O .000 24.660 3.480  
 □ 14.000  
 ◇ 24.000

PARAMETRIC VALUES  
 .000 OFFSET 20.000  
 1.000 PHI 315.000

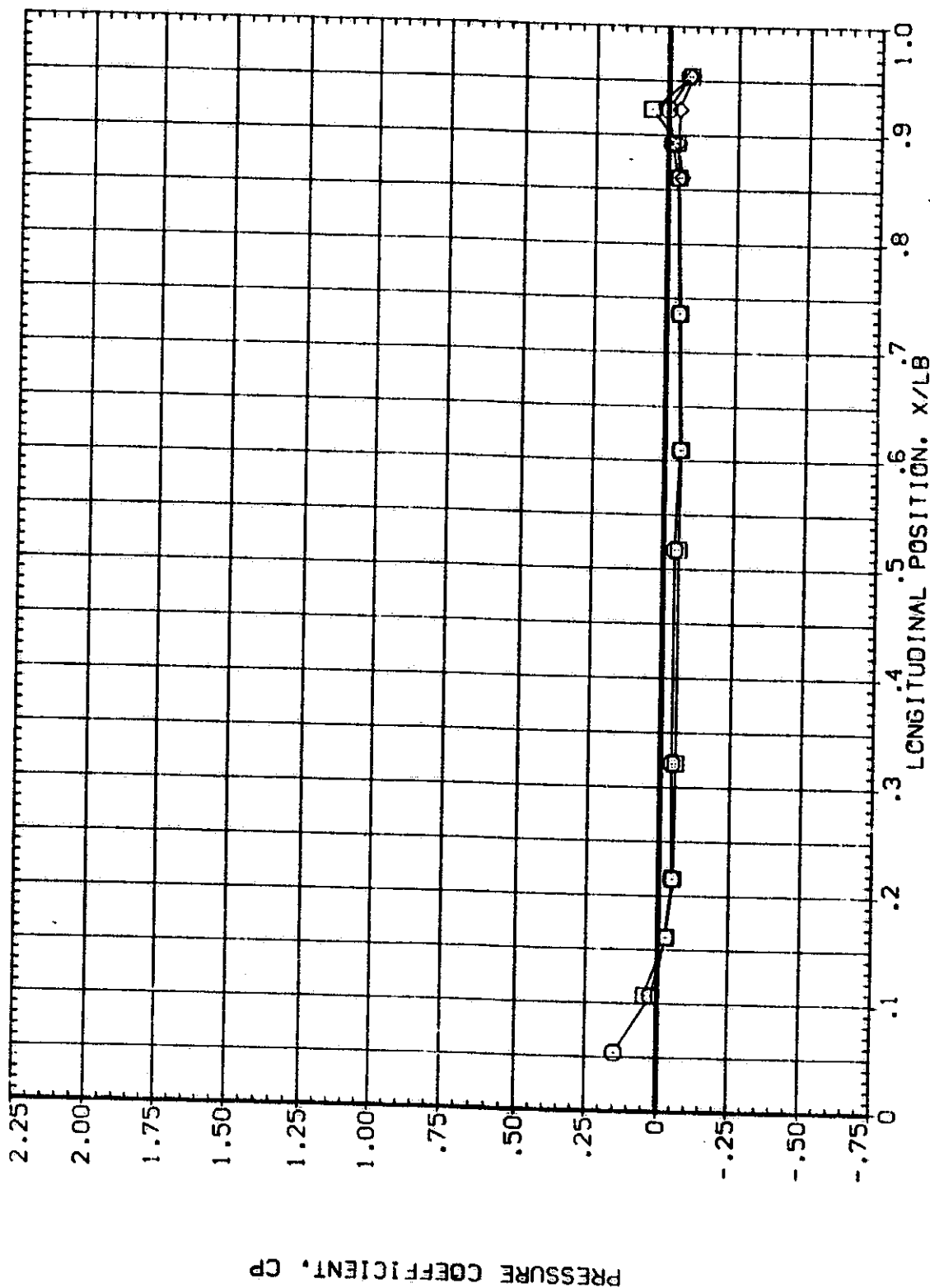


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

SYMBOL  
 ○  
 □  
 ◇

THETA  
 45.000  
 67.500  
 90.000

ALPHA  
 24.660

MACH  
 3.480

BETA  
 MOUNT

PARAMETRIC VALUES  
 .000  
 1.000  
 .000  
 .000  
 .000  
 .000

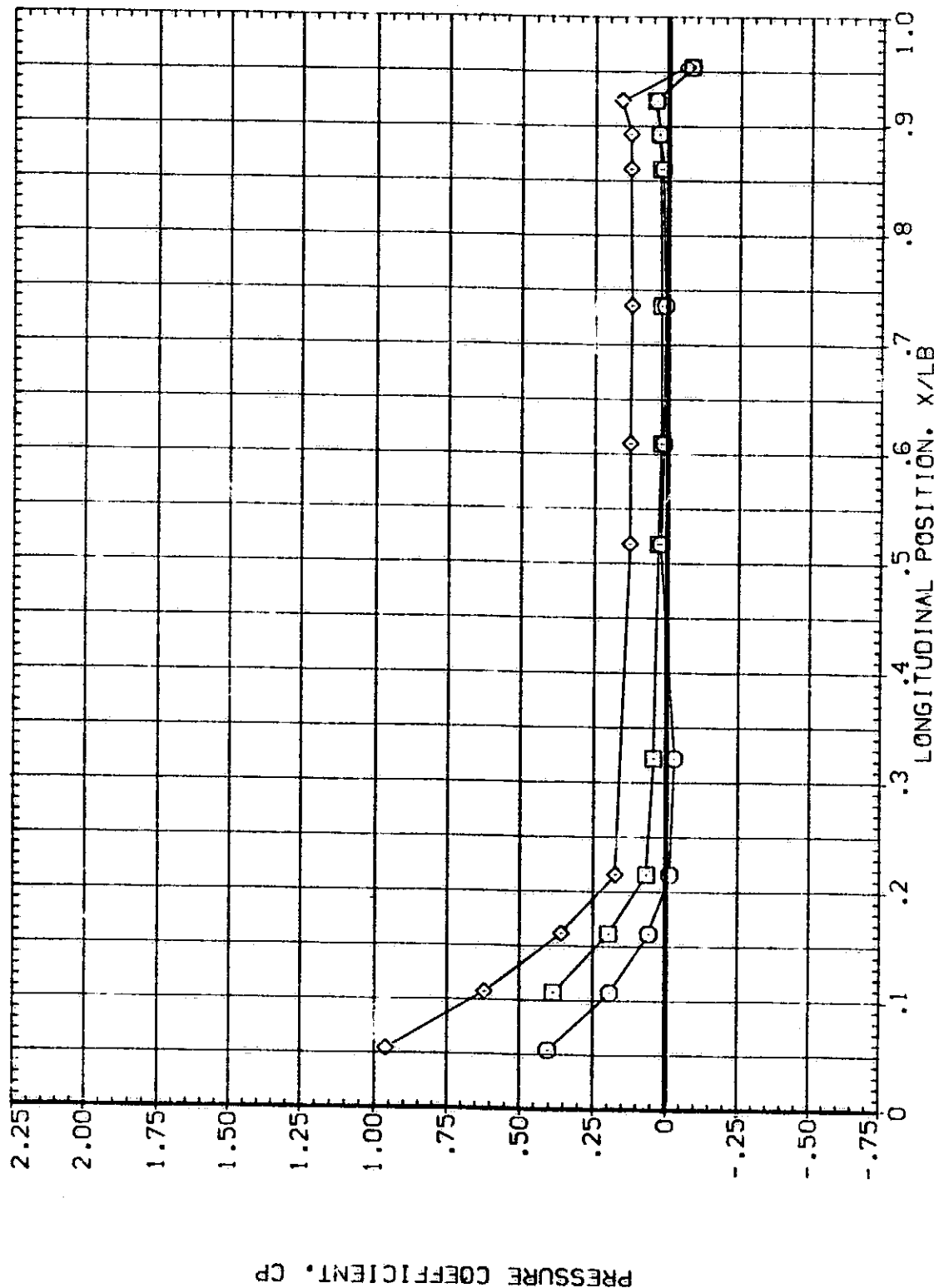


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

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MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A099)

SYMBOL

THETA  
112.500  
135.000  
157.500

ALPHA  
24.660

MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

20.000  
315.000

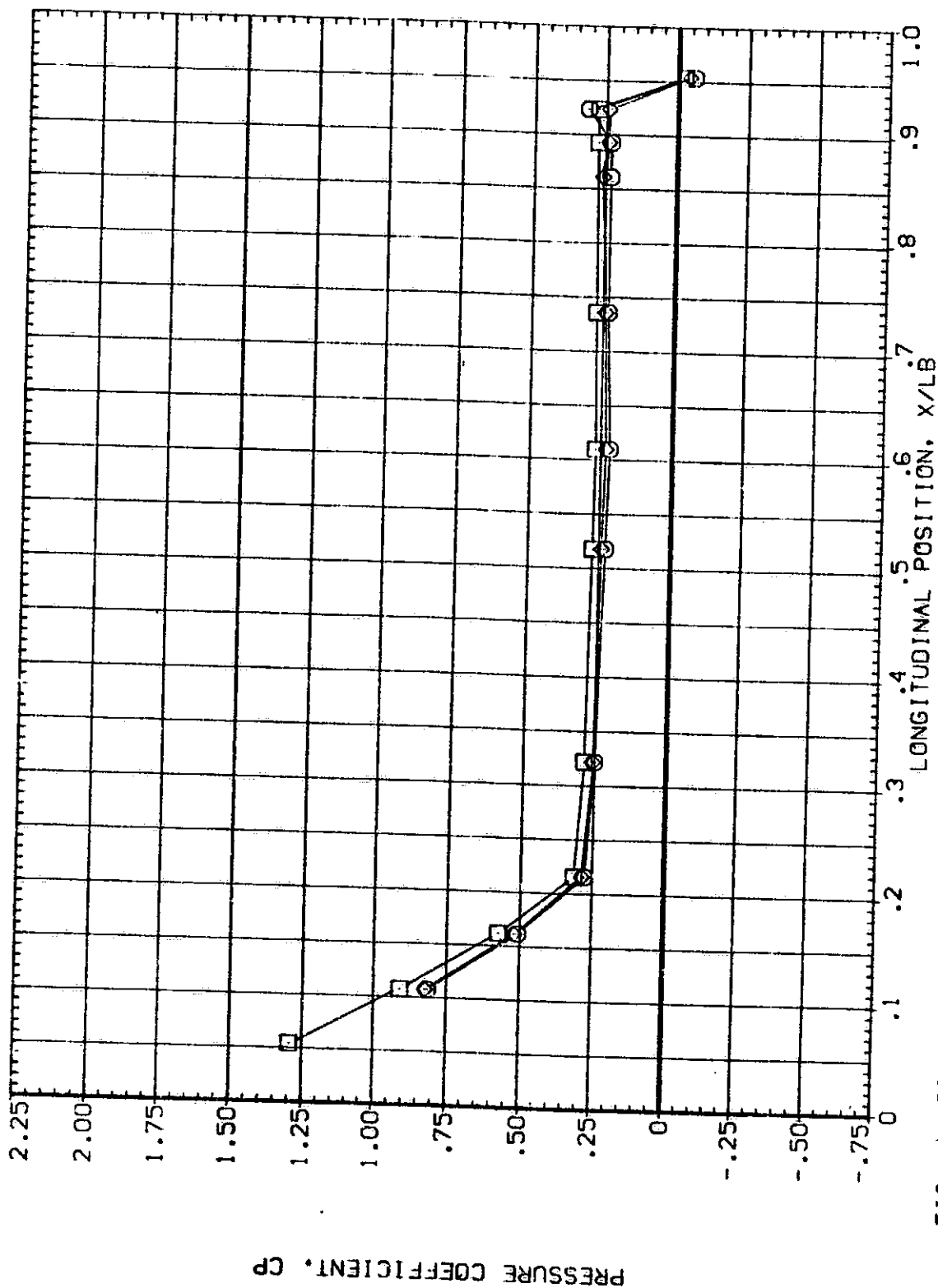


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA099)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	180.000	24.560	3.480	.000	20.000	
□	202.500			1.000	315.000	
◇	225.000					

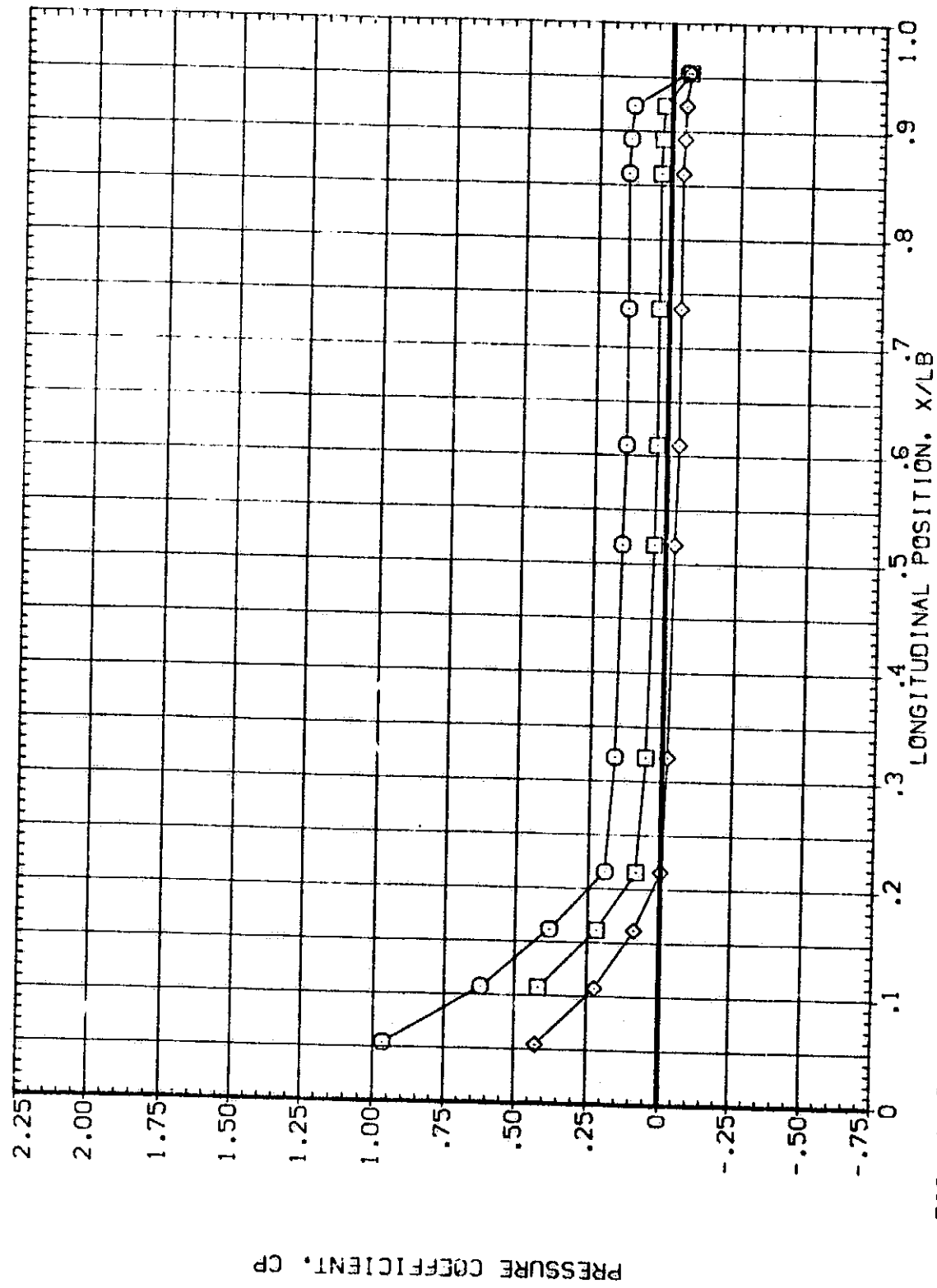


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA099)

SYMBOL	THETA		ALPHA		MACH		PARAMETRIC VALUES			
	247.500	247.500	24.660	24.660	3.480	3.480	BETA	OFFSET	PHI	
○	270.000						1.000			20.000
◇	292.500						1.000			315.000

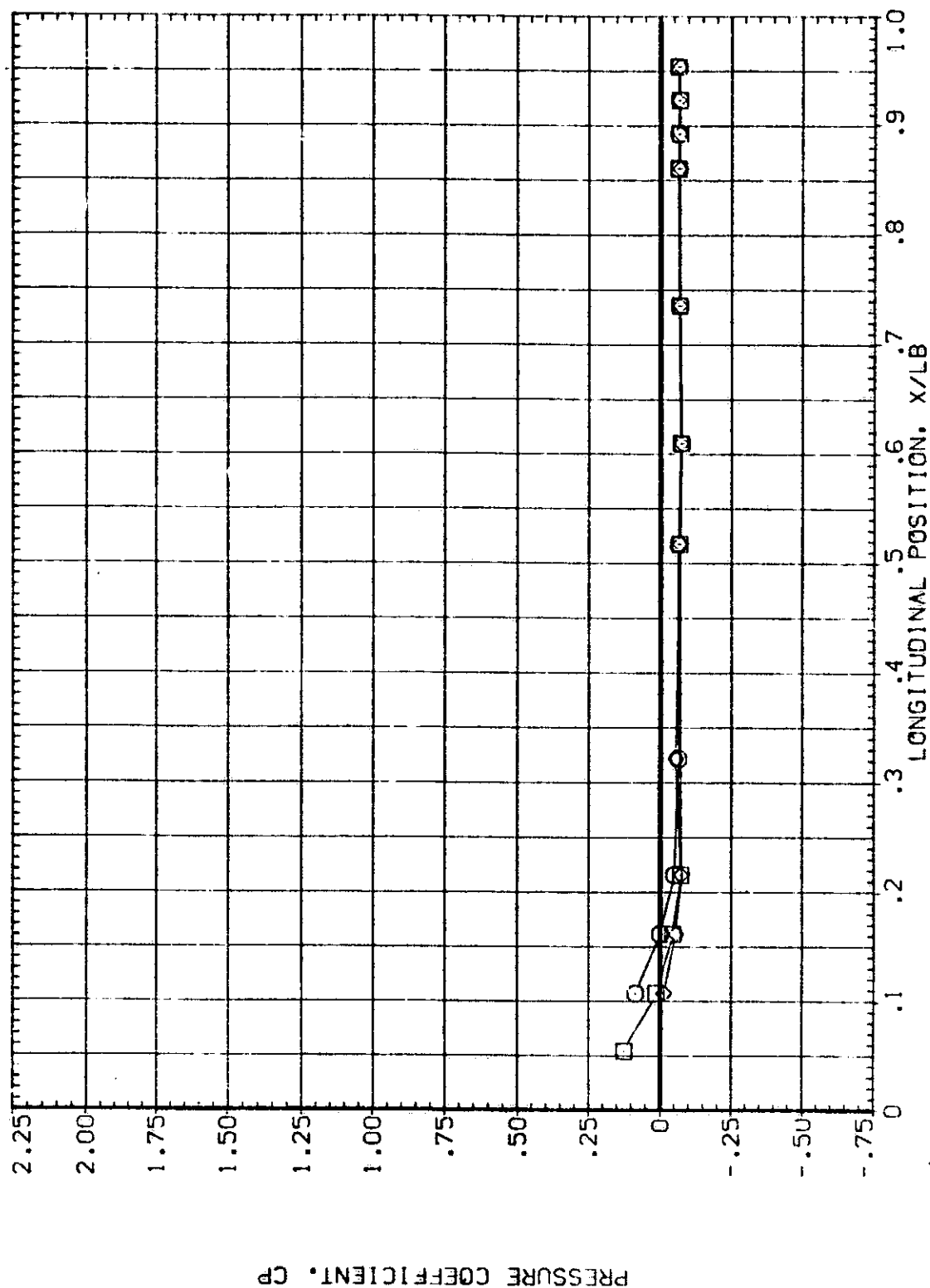


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES



MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA099)

SYMBOL	THETA		ALPHA		MACH		BETA		PARAMETRIC VALUES	
	215.000	326.000	24.660	3.480	20.000	315.000	.000	OFFSET	.000	PHI
◇	326.000	346.000					1.000			

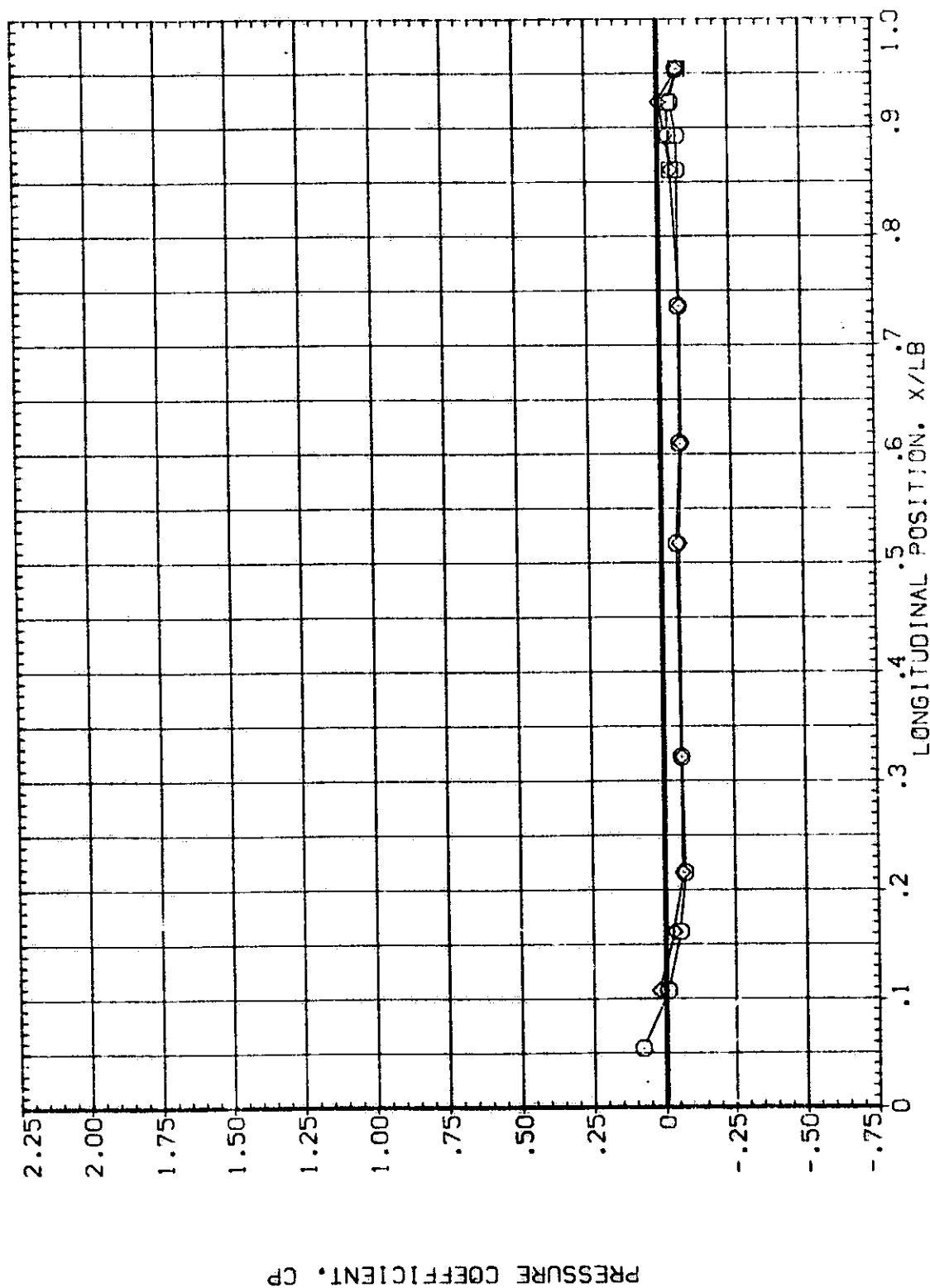


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A100)

SYMBOL	THETA		ALPHA		MACH		BETA		PARAMETRIC VALUES		
	.000	14.000	28.700		3.480		MOUNT	.000	OFFSET	20.000	
□								1.000 <th>PHI</th> <th>315.000</th>	PHI	315.000	
◇											

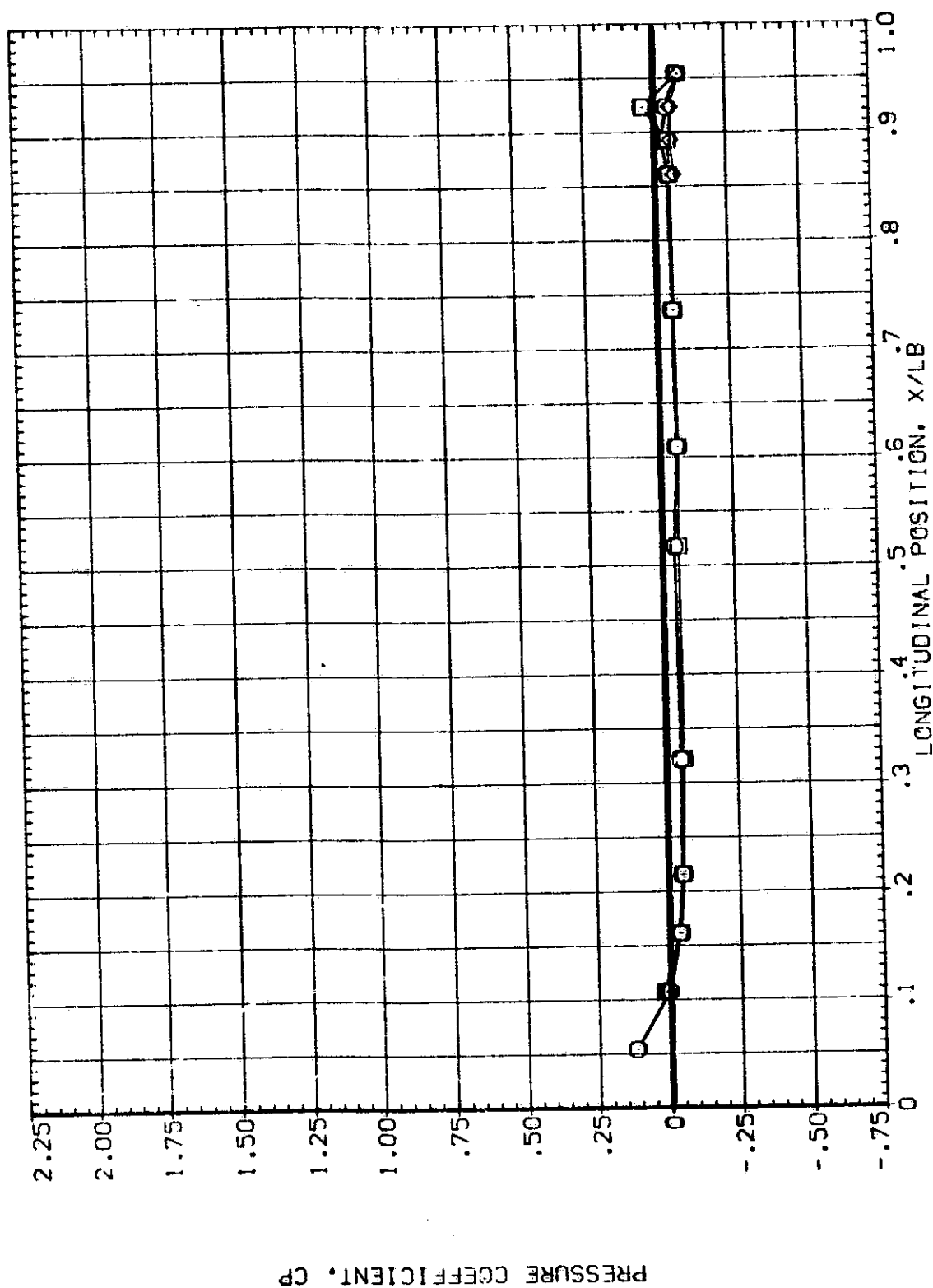


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA100)

SYMBOL    THETA    ALPHA    MACH  
 ◊    45.000    28.700    3.480  
 ◻    67.500  
 ○    90.000

PARAMETRIC VALUES  
 .000    OFFSET    20.000  
 1.000    PHI    315.000

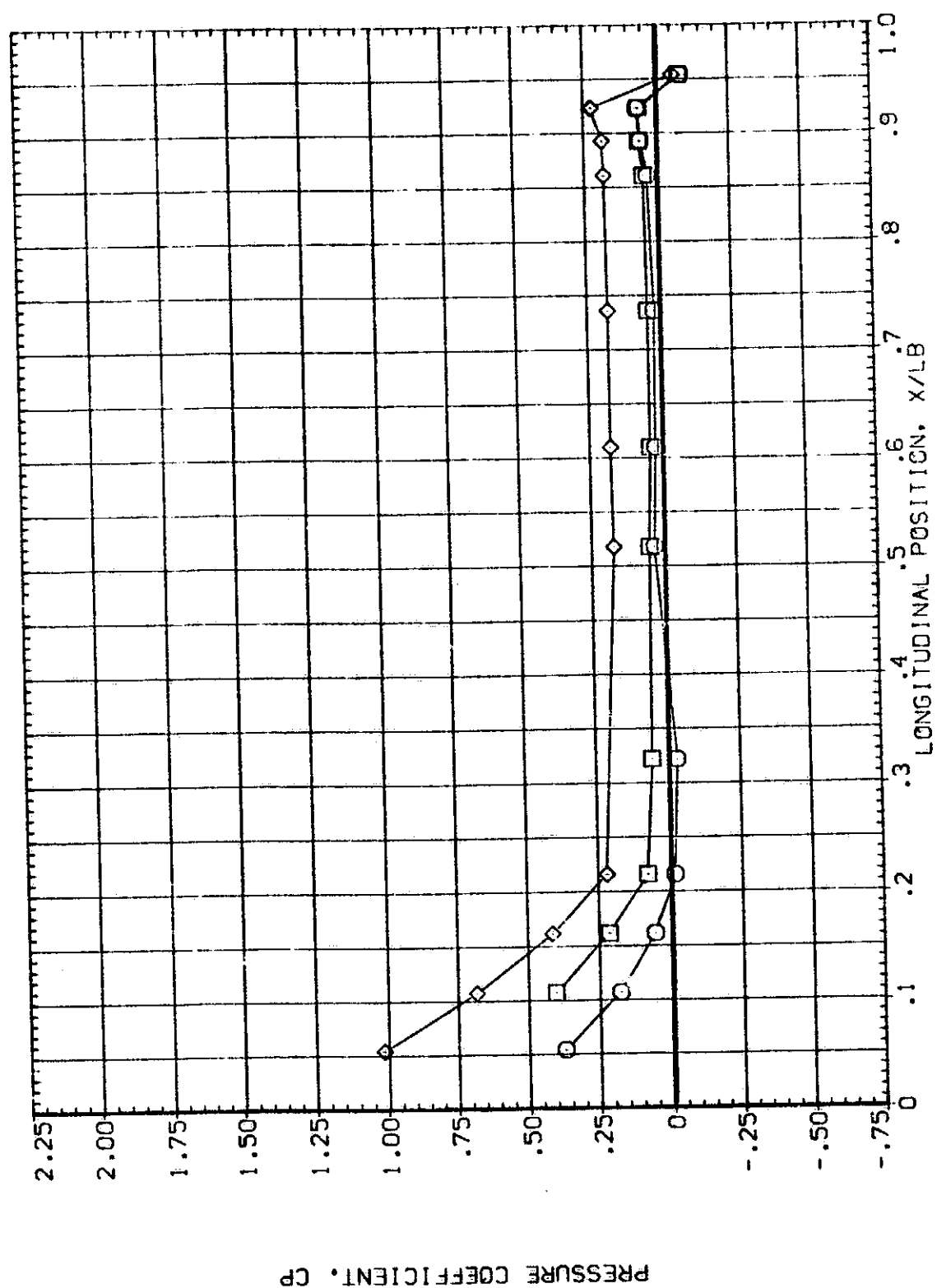


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA100)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	20.000
□	112.500	28.700	3.480	1.000	PHI	315.000
○	135.000					
◇	157.500					

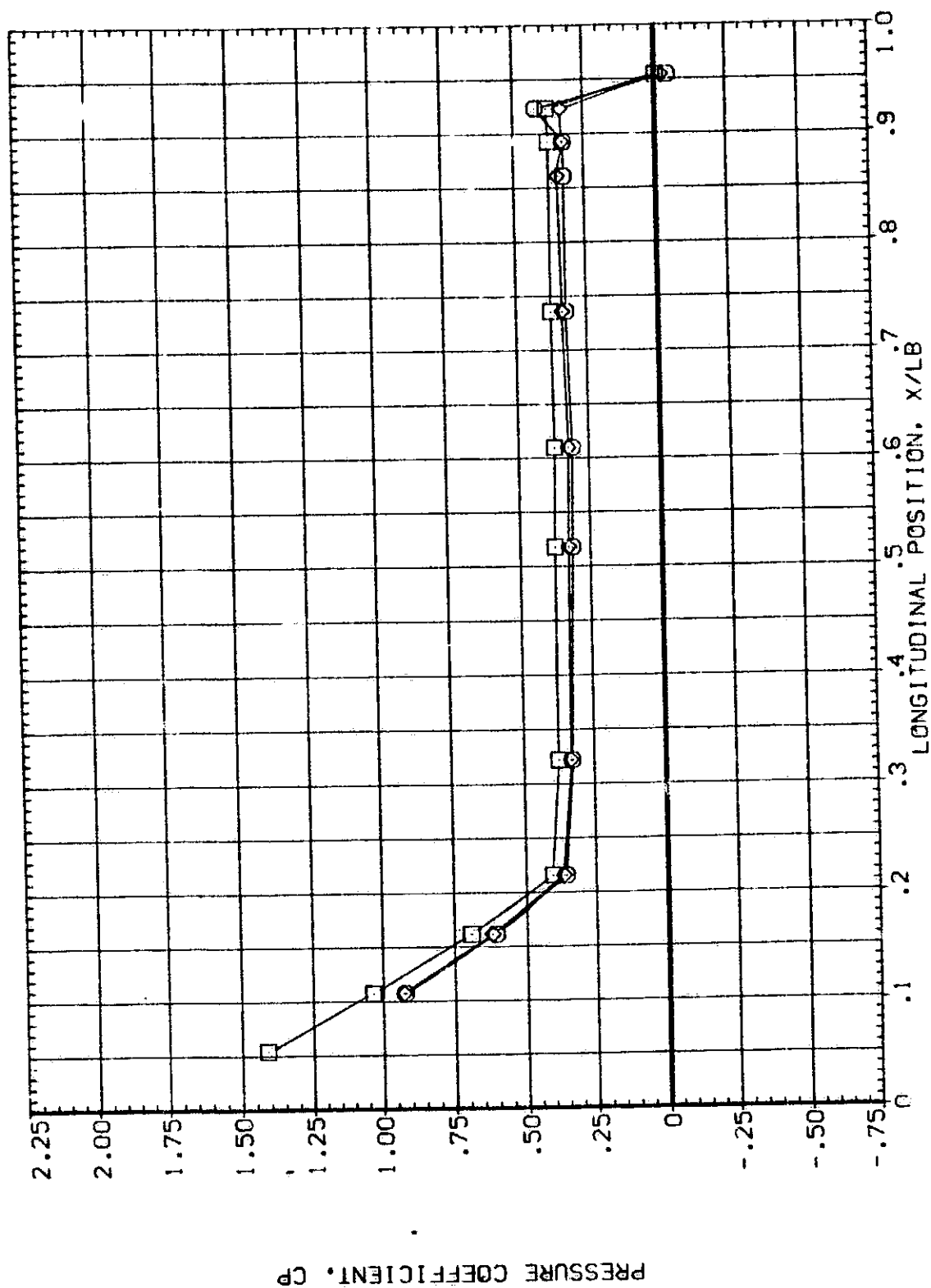


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (P1A100)

SYMBOL

○ □ ◇

THETA  
180.000  
202.500  
225.000

ALPHA  
28.700  
MACH  
3.480

PARAMETRIC VALUES

BETA  
MOUNT

.000  
1.000

OFFSET  
PHI

20.000  
315.000

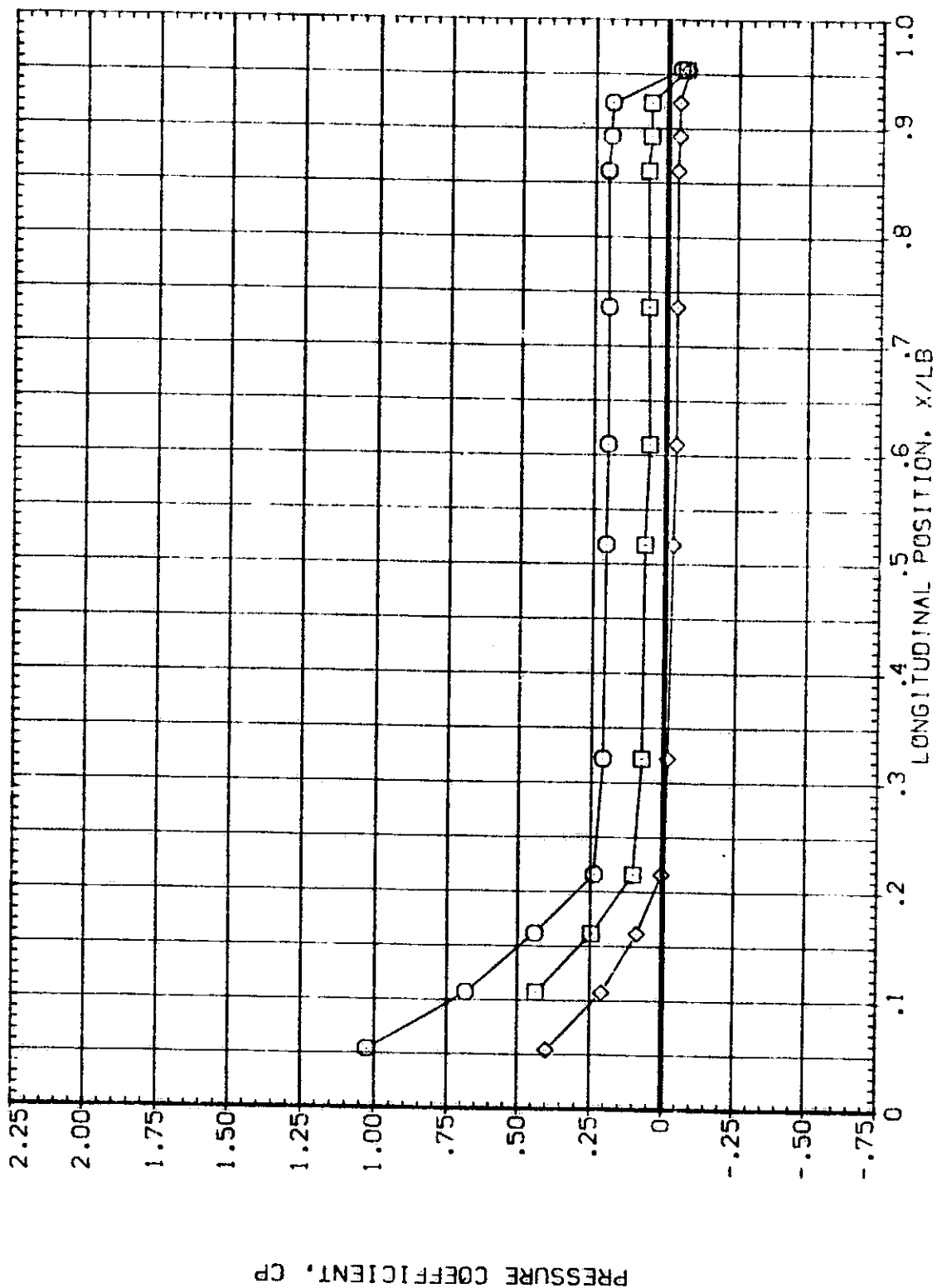


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1 (PIA100)

SYMBOL	THETA	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	OFFSET	PHI
○	247.500	28.700	3.480	.000	20.000	
□	270.000			1.000		315.000
◇	292.500					

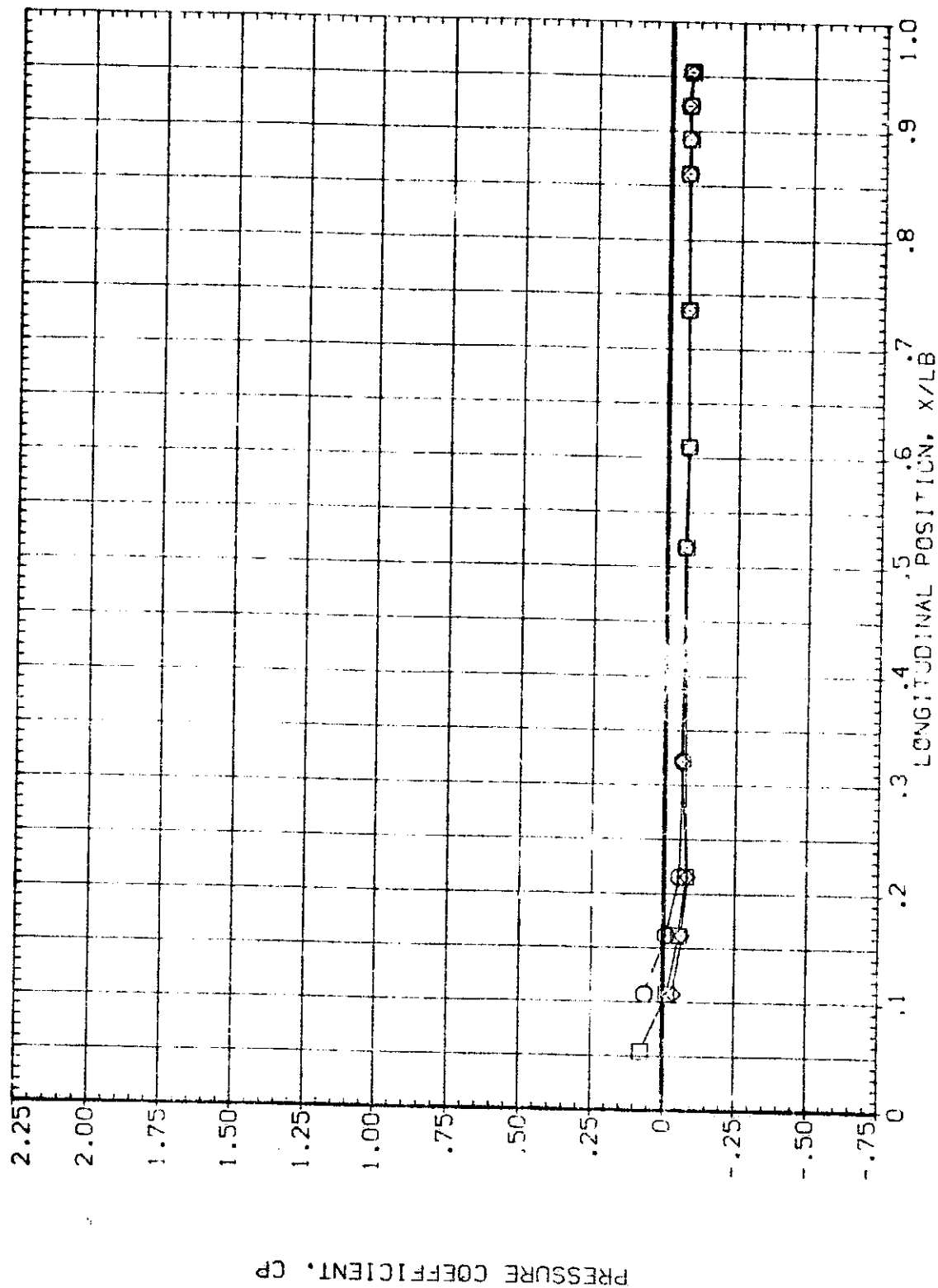


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES

# MSFC 596 (TA-2F) MCR0200 EXTERNAL TANK, T1

SYMBOL

THETA  
315.000  
326.000  
346.000

ALPHA  
28.700  
MACH  
3.480

(P1A100)

PARAMETRIC VALUES  
GFA .000 OFFSET 20.000  
MOUNT 1.000 PH 315.000

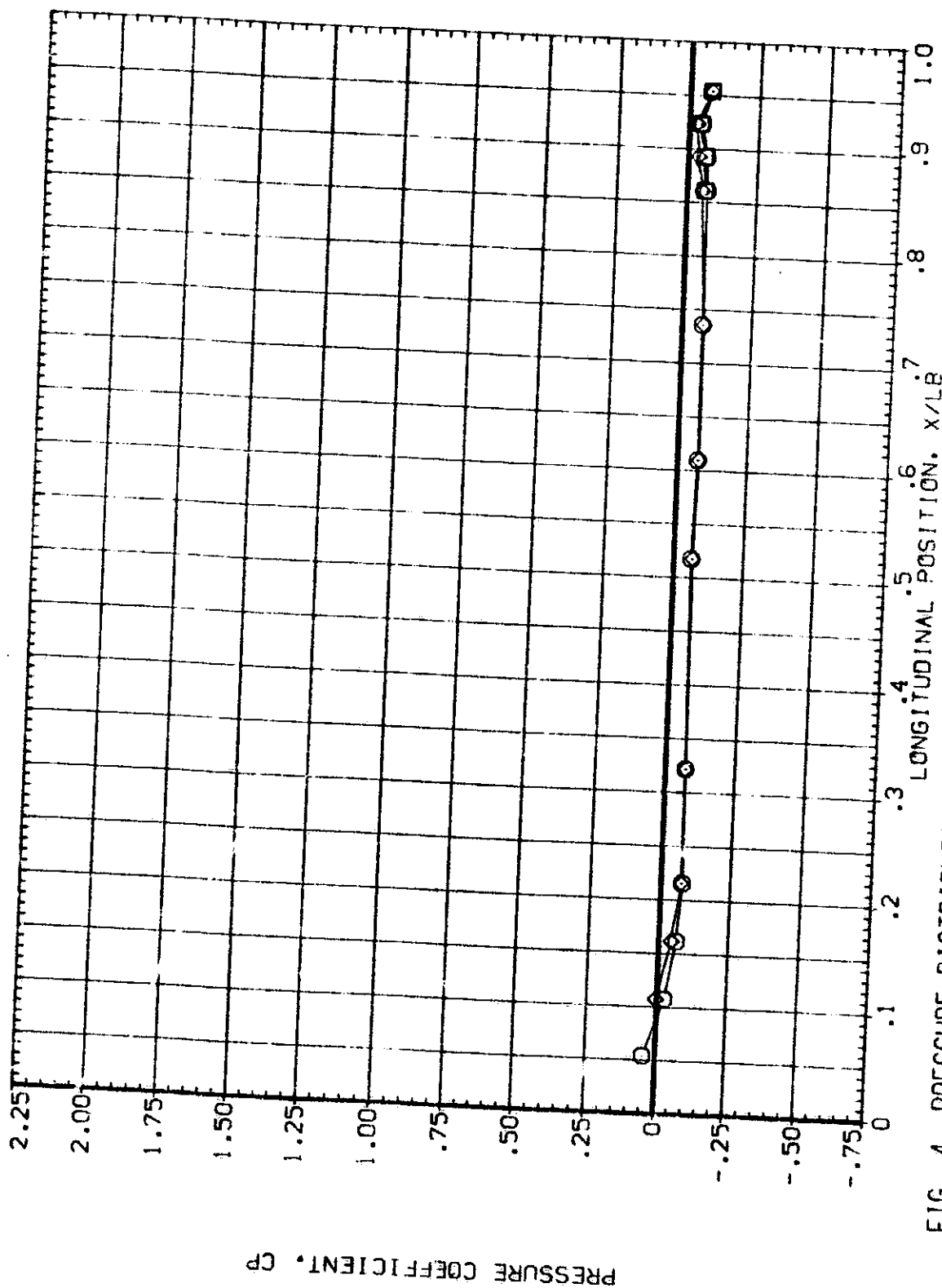


FIG. 4 PRESSURE DISTRIBUTION OVER ET - T1 MODEL WITH PROTUBERANCES